Manitoba **Memorandum**

DATE: December 12, 2014

TO: Tania Steele

FROM: Eshetu Beshada, Ph.D., P.Eng.
Environmental Engineer
Municipal and Industrial Section
160 - 123 Main Street
Winnipeg, Mb R3C 1A5
Ph:204 945-7023

SUBJECT: **Transcontinental Printing 2005 GP. – Information for Public Registries**

Tania,

Please find attached the TAC comment and proponent response related to the Transcontinental Printing file (5082.10) for distribution to the public registries. The documents included are:

- December 3, 2014 memo from Muntaseer Ibn Azkar, 1 page
- October 23, 2014 letter from Ross Szwec, 150 pages
- September 12, 2014 e-mail from Eshetu Beshada, 1 page

152 pages total

Thank you.

Eshetu Beshada, Ph.D., P. Eng.

Manitoba

Memorandum

DATE: 03 December, 2014

TO: Eshetu Beshada
Environmental Approvals
Conservation and Water Stewardship
160-123 Main Street, Winnipeg

FROM: Muntaseer Ibn Azkar
Air Quality–Environmental Programs & Strategies
Conservation and Water Stewardship
1007 Century Street, Winnipeg

SUBJECT: Comments on Transcontinental Printing's Response – LGM Graphics Printing Operation (File 5082.10)

Air Quality Section has reviewed the additional submissions and provide the following comments:

- Based on the submissions (detailed VOC emission calculation and supplementary information regarding used chemicals), the facility's total annual VOC emissions are within the CCME limits. (Provided that the emission calculations and their underlying assumptions is in compliance with the CCME Code of Practice)
- No information was provided regarding emission rates and predicted ambient VOC concentrations but an air dispersion modeling for the facility may not be necessary at this time. However, it is suggested that air dispersion modeling is included as one of the License conditions, the timing of the conduct of such is at the discretion of the Director.

Thank you for the opportunity to review.

Montreal, October 23, 2014

Mr. Eshetu Beshada
Environmental Approvals
Manitoba Conservation and Water Stewardship
Environmental Approvals Branch
160-123 Main Street
Winnipeg, Manitoba
R3C 1A5

Subject: Response to comments issued by the Air Quality Section regarding Transcontinental Printing 2005 – LGM Graphic Printing Operation proposal File no. 5082.10

Dear Mr. Beshada,

Thank you for your e-mail of September 12th regarding the above-mentioned file, which included comments issued by Mr. Muntaseer Ibn Azkar of the Air Quality Service in a memorandum dated September 4th, 2014. This letter addresses each of the four comments issued. A copy of the memorandum is included in Appendix A for your ease of reference.

First comment:

The proposal provides only total annual VOC emissions from the printing press. It is recommended that details and assumptions on the VOC emissions calculations be submitted. It is also suggested that the proponent comply with the CCME Environmental Code of Practice for the reduction of VOC Emissions from the Commercial/Industrial Printing Industry for calculating and controlling VOC emissions from the facility.

Response to first comment:

The VOC emissions were calculated using an MS Excel® workbook originally developed by ÉEM inc. in 2002 specifically for Transcontinental inc. The tool has been used by Transcontinental's printing facilities across the country for the purpose of reporting to the federal *National Pollutant Release Inventory* (NPRI). The emission calculations and their underlying assumptions were developed using the CCME Code of Practice, although more recent emissions factors used in the tool are based on US Environmental Protection Agency guidelines and are referenced in the file under the «References» tab.

Note that the data entered has been revised since our first application submission subsequent to a misunderstanding regarding changes in ink consumptions that was to occur in May 2014 and an typographical error discovered in one inks VOC concentration. A copy of the MS Excel® workbook tabs are provided in Appendix B.

The original calculation projected annual VOC emissions to be on the order of 11 metric tonnes. Current projected VOC emissions, based on the revised projected ink, solvent/wash, fountain solution and natural gas consumptions would be on the order of 16 metric tonnes per year. For comparative purposes, the facility's NPRI declarations for VOC emissions for the previous 5 years have been the following:

2013: 15 mt

2012: 16 mt

2011: 14 mt

2010 : 18 mt

2009: 15 mt

According to the *Environmental Code of Practice for the Reduction of Volatile Organic Compound Emissions from the Commercial/Industrial Printing Industry* (August 1999), section 4.1, VOC emissions should be limited to the greater of the two rates corresponding to the following 2 options:

- A VOC emission limit of no more than 25 metric tonnes per calendar year; or,
- The allowable fraction of the baseline uncontrolled VOC amount for the facility, determined pursuant to section 4.2 of the Code.

Given that LGM's allowable fraction of baseline uncontrolled VOCs corresponds to 8 metric tonnes based on the projected consumption figures (refer to Appendix B), LGM's VOC emission performance target corresponds to 25 metric tonnes according to the CCME Code of Practice. Note that the projected annual VOC emissions for LGM are 9 metric tonnes below this value and have consistently been below 25 metric tonnes since at least 2006 according to annual NPRI declarations for the facility.

With regards to controlling VOC emissions, LGM applies several controls including:

- Use of manual press cleaning solvents having a low photo-chemical reactivity (Varn 313 blue, Varn 324);
- Use of an automated cleaning system on the M1000 press line. With automated cleaning, a substrate impregnated with a dosed amount of solvent passes through the press. This results in reduced solvent use and allows the regenerative thermal oxidizer to be in use during the cleaning cycle;
- Use of vegetable based inks;
- Directing of press line emissions to a regenerative thermal oxidizer unit with a 96% VOC destruction efficiency;
- Dispensing of cleaning solvents using manual pumps in order to minimize fugitive emissions;
- Storage of solvents in bench-cans with lids at work station; and,
- Storage of soiled cleaning rags in closed-top containers to minimize fugitive emissions.

A copy of Transcontinental's best practices guidelines are included in Appendix D.

Second comment:

Although the source of VOC emissions are identified in the proposal, no speciation is provided, hence it is suggested that the VOC is characterized to identity the specific VOCs. This is important in order to identify the presence of VOCs listed under the Priority Substances List (PSL) of the Canadian Environmental Protection Act 1999 (CEPA 1999).

Response to second comment:

The principle products used by LGM are listed in Table 1. Material safety data sheets for each product are provided in Appendix E. VOC containing products are indicated in the table as are products that contain substances that appear on the *Federal Priority Substances List*. Note that MSDS nos. 1 to 13 that were submitted with the original proposal are no longer used by the facility. Substances 33 to 37 are new inks that are used.

Table 1 : VOC containing products used by LGM

MSDS	Product type	Product name	Manufacturer	VOC	FPSL
33	Ink	FTCN273090 Yellow	Flint	Y	Aluminum sulfate 0.2%[1]
34	Ink	BI19200387 Yellow	Sun Chemical	Y	N
35	Ink	BI19400873 Magenta	Sun Chemical	Y	N
36	Ink	BI19501184 Cyan	Sun Chemical	Y	N
37	Ink	BI19900249 Black	Sun Chemical	Y	N
13	Ink	FTCN204400 Black	Flint	Y	N
14	Ink	FTCN224400 Cyan	Flint	Y	N
15	Ink	FTCN244400 Magenta	Flint	Y	N
16	Ink	FTCN274400 Yellow	Flint	Y	N
17	Ink	FTCN203090 Black	Flint	Y	N
18	Ink	FTCN223090 Cyan	Flint	Y	N
19	Ink	FTCN243090 Magenta	Flint	Y	N
20	Solvent	V-313 blue	Varn	Y	Xylenes 0.23%
21	Solvent	V-324	Varn	Y	N
22	Solvent	Saphira PW-3207A	Nova Heidleburg	Y	N

[1] The definitive conclusion of toxic or not toxic with respect to human health has not been reached by Health Canada for this this substance. The assessment of aluminum sulfate has therefore been suspended while Health Canada collects data regarding the toxicity of this substance for human health.

MSDS	Product type	Product name	Manufacturer	VOC	FPSL
23	Solvent	Prepac autowash	Baldwin	Y	N
26	Solvent	Rubber rejuvenator	United chemical service	Y	N
24	Fountain solution	Emerald premium KDHP	Fuji	Y	Ethylene glycol 0.1-1%
25	Fountain solution	Emerald premium MXEH-M	Fuji	Y	Ethylene glycol 0-1%
27	Ink tack control	200-383 NC 400 Flash oil	Sun Chemical	N	N
28	Pre-press chemical	Silcone emulsion DVQ	Fuji	N	N
29	Pre-press chemical	LP-DZ news developer	Fuji	N	N
30	Pre-press chemical	LP-DZ news developer replenisher	Fuji	N	N
31	Pre-press chemical	MetaAid CA10 neutralizer	Metafix	N	N
32	Pre-press chemical	PS plate finisher gum	Fuji	N	N

Third comment:

There is no information provided regarding emission rates and predicted ambient concentrations. As the nearest residential area is ~200 meters away from the plant, it may be necessary to have these data to provide a meaningful assessment on the potential impacts to air quality. (Air dispersion modeling of the emissions may be necessary to estimate the potential ambient air concentrations in the facility's area of influence.)

Response to third comment:

Facility emission rates and ambient concentrations are expected to be virtually unchanged from those prior to facility modification. Note that the facility has received no complaints related to air emissions or odours since at least 2006.

Fourth comment:

Air Quality Section recommends that the standard odour nuisance clause be included in the Licence.

Response to fourth comment:

LGM has no objection to this clause.

We hope that the responses provided adequately address the concerns raised by the Technical Advisory Committee member. Please feel free to contact us at your convenience if you have any further questions or comments.

Sincerely,

Ross Szwec

ÉEM inc.

Encl.

Appendix A	Memorandum issued by Mr. Muntaseer Ibn Azkar of the Air Quality Service on dated September 4th, 2014
Appendix B	VOC calculation worksheets
Appendix C	Correspondence from Flint regarding FPSL substances present in inks supplied to LGM
Appendix D	Transcontinental's Guidelines for the reduction of volatile organic compounds
Appendix E	Material safety data sheets

APPENDIX A

Memorandum issued by Mr. Muntaseer Ibn Azkar of the Air Quality Service on dated September 4th, 2014

Manitoba

Memorandum

DATE: 04 September 2014

TO: Eshetu Beshada
Environmental Approvals
Conservation and Water Stewardship
160-123 Main Street, Winnipeg

FROM: Muntaseer Ibn Azkar
Air Quality–Environmental Programs & Strategies
Conservation and Water Stewardship
1007 Century Street, Winnipeg

SUBJECT: Transcontinental Printing 2005 – LGM Graphics Printing Operation (File 5082.10)

Air Quality Section has reviewed the above proposal and provides the following comments:

- The proposal provides only total annual VOC emissions from the printing press. It is recommended that details and assumptions on the VOC emissions calculations be submitted. It is also suggested that the proponent comply with the CCME Environmental Code of Practice for the reduction of VOC Emissions from the Commercial/Industrial Printing Industry for calculating and controlling VOC emissions from the facility.
- Although the source of VOC emissions are identified in the proposal, no speciation is provided, hence it is suggested that the VOC is characterized to identity the specific VOCs. This is important in order to identify the presence of VOCs listed under the Priority Substances List (PSL) of the Canadian Environmental Protection Act 1999 (CEPA 1999).
- There is no information provided regarding emission rates and predicted ambient concentrations. As the nearest residential area is ~200 meters away from the plant, it may be necessary to have these data to provide a meaningful assessment on the potential impacts to air quality. (Air dispersion modeling of the emissions may be necessary to estimate the potential ambient air concentrations in the facility's area of influence.)
- Air Quality Section recommends that the standard odour nuisance clause be included in the Licence.

APPENDIX B

VOC calculation worksheets

Atmospheric Emission of Criteria Air Contaminants (CACs), including Volatile Organic Compounds (VOCs), and of Greenhouse Gases (GHG)

Site:	LGM
Province (state)	Manitoba
Reporting year:	2014
Completed by:	Ross Szwec
Number of employees :	

Miscellaneous	
Paper purchased (tonnes)	
Printed paper (tonnes)	
Water consumption (m^3)	

Criteria Air Contaminants (CAC)	Emissions (tonnes)	Declaration Threshold (tonnes)	NPRI Declaration (Canada only)
CO	1.35	20	*No declaration required for CO*
NO_x	1.60	20	*No declaration required for NOx*
SO_2	0.01	20	*No declaration required for SO2*
TPM	0.03	20	*No declaration required for TPM*
$PM_{2.5}$	0.03	0.3	*No declaration required for PM 2.5*
PM_{10}	0.03	0.5	*No declaration required for PM 10*
VOC (see breakdown below)	16.06	10	*Declaration required for VOC*

VOC Emissions	Fugitive Emissions(tonnes)	Controlled Emissions(tonnes)
Inks	0.00	1.57
Cleaning	13.93	0.05
Fountain Solution	0.38	0.04
Coating	0.00	0.00
Others (eg: fossil fuel combustion)	0.00	0.09
Total	**14.32**	**1.74**

Greenhouse Gases Emissions	Emissions (tonnes)
Scope 1 equ CO2	2035.57
Scope 2 equ CO2	0.00
Total equ CO_2	**2035.57**

Product Use	Quantity Purchased (kg)	Quantity sent for disposal (kg)	Quantity used on site (kg)
Inks	137,107.00	6,855.35	130,251.65
Cleaning	30,111.96	1,505.60	28,606.36
Concentrated Fountain Solution	12,906.85	645.34	12,261.51
Coating	0.00	0.00	0.00
Total Printing Chemicals	180,125.81	9,006.29	171,119.52

How to complete the calculation sheets

The purpose of this tool is to evaluate the quantity of Criteria Air Contaminants (CAC) released to the atmosphere in accordance with part 4 of the National Pollution Release Inventory (NPRI) and to collect data for Transcontinental's Environmental Performance Indictors (EPI).

This tool is a preliminary evaluation tool to determine if there is a need to complete an NPRI report for submission to the Canadian Government. It is therefore not a precise calculation and some assumptions and generalisations have been made. To complete an NPRI report, a more detailed calculation may be required and further detail about the types of VOCs will be required.

Please complete the spreadsheets applicable to your facility (heatset, coldset or both) as well as the Energy Use sheet by entering data collected for the **calendar year (1 Jan - 31 Dec)**. **Only the green cells are to be completed.**

Complete the spreadsheets one after the other. The spreadsheets use data filled in the previous spreadsheets to calculate the emissions.

For **Canadian** facilities only: Once you have completed the sheet, please report to the NPRI as necessary as described in the summary table above.
For **all** facilities: Please transpose the calculated values to the Annual Report on the Transcontinental intranet for the Environmental Performance Indicators project.

Help

Efficiency of the incinerator :	This information can be obtained by measurement (with the services of a specialist) or by accepting the manufacturer's estimate which should be indicated in the equipment documentation.
Quantity used :	Enter the amount of the product used during the year ensuring that the unit of measure is respected. Purchase records are probably the best source for this information.
Quantity sent for disposal :	Enter the amount of product sent for disposal as waste in 2008. The disposal company may be able to supply this information or it may be calculated from waste shipping documents or invoices. It could also be estimated from your knowledge of the process.
	Note that for the fountain solution, you need to enter the amount of concentrate sent for disposal, not the diluted quantity.
VOC content (%) :	Enter the VOC content in the product (concentration). This information can be found on the Material Data Safety Sheets (MSDS) in the "Physical Properties" section. The concentration may be presented as a range (e.g.: 30%-40%). In this case, enter the mean value (e.g.: 35%). Ensure that you enter the information in the correct unit. Should the unit be different, you will need to convert the amount to a percentage.
	Use the conversion tool at the end of this workbook
Consumption of natural gas :	Enter the annual consumption of natural gas in m^3 The information can be obtained from the supplier's invoices.
Diesel :	Enter the annual consumption of diesel in litres. If possible, separate the quantities for mobile and stationnary sources. If not possible, enter the total amount as a fixed source.
Propane	Enter the annual consumption of propane in litres and the number of cylinders bought for lift trucks.
Heating Oil	Enter the annual consumption of heating oil in litres.

VOC Emission Calculations: Heatset

LGM	2014

Summary of emissions (kg)	
Conventional Inks	1,567.8
Fountain Solutions	420.5
Cleaning	13,980.5
Conventional Coating	0.0
Total VOC emissions	**15,968.7**

Source data	
Efficiency of the incinerator (%)	**96.0**

Inks - conventional

Assume 5% waste

MSDS no.	Identification (Name, number)	Manufacturer	Quantity used (kg)	Quantity sent for disposal (kg)	VOC Content (%) - see MSDS	Total VOC consumed (kg)	VOC retained in the paper (kg)	VOC captured by the dryer (kg)	VOC destroyed by the incinerator (kg)	Fugitive Emissions (kg)	VOC emissions via the stack (kg)	Total VOC emissions to the atmosphere (kg)
9	**BI19200387 HS SP PRO YELLOW**	**Sun Chemical**	**200.0**	**10.0**	**36.39**	69.1	13.8	55.3	53.1	0.0	2.2	2.2
10	**BI19400873 HS SP PRO MAGENTA**	**Sun Chemical**	**200.0**	**10.0**	**31.38**	59.6	11.9	47.7	45.8	0.0	1.9	1.9
11	**BI19501184 HS SP PRO CYAN**	**Sun Chemical**	**150.0**	**7.5**	**33.68**	48.0	9.6	38.4	36.9	0.0	1.5	1.5
12	**BI19900249 HS SP PRO BLACK**	**Sun Chemical**	**150.0**	**7.5**	**31.84**	45.4	9.1	36.3	34.8	0.0	1.5	1.5
13	**FTCN204400 mt BLACK**	**Flint**	**25,604.3**	**1,280.2**	**36.41**	8,856.4	1,771.3	7,085.1	6,801.7	0.0	283.4	283.4
14	**FTCN224400 mt CYAN**	**Flint**	**27,356.3**	**1,367.8**	**33.77**	8,776.3	1,755.3	7,021.0	6,740.2	0.0	280.8	280.8
15	**FTCN244400 mt MAGENTA**	**Flint**	**24,579.8**	**1,229.0**	**37.45**	8,744.9	1,749.0	6,995.9	6,716.1	0.0	279.8	279.8
16	**FTCN274400 mt YELLOW**	**Flint**	**25,966.5**	**1,298.3**	**41.95**	10,348.3	2,069.7	8,278.6	7,947.5	0.0	331.1	331.1
17	**FTCN203090 lt BLACK**	**Flint**	**6,954.0**	**347.7**	**33.26**	2,197.3	439.5	1,757.8	1,687.5	0.0	70.3	70.3
18	**FTCN223090 lt CYAN**	**Flint**	**9,321.8**	**466.1**	**38.38**	3,398.8	679.8	2,719.0	2,610.3	0.0	108.8	108.8
19	**FTCN243090 lt MAGENTA**	**Flint**	**6,925.5**	**346.3**	**40.19**	2,644.2	528.8	2,115.4	2,030.7	0.0	84.6	84.6
33	**FTCN273090 lt YELLOW**	**Flint**	**9,699.0**	**485.0**	**41.29**	3,804.5	760.9	3,043.6	2,921.8	0.0	121.7	121.7
						0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total		137,107.0	6,855.4		48,992.7	9,798.5	39,194.2	37,626.4	0.0	1,567.8	**1,567.8**

Inks - UV (UV inks do not contain VOCs but this information is required for Transcontinental's environmental performance indicators project)

Identification (Name, number)	Manufacturer	Quantity used (kg)	Quantity sent for disposal (kg)
Total		0.0	0.0

Concentrated Fountain Solution

Assume 5% waste

MSDS no.	Identification (Name, number)	Manufacturer	Quantity used (Liters)	Quantity sent for disposal (Liters)	Total Quantity (kg)	VOC Content (%) - see MSDS	Total VOC consumed (kg)	VOC captured by the dryer (kg)	VOC destroyed by the incinerator (kg)	Fugitive Emissions (kg)	VOC emissions via the stack (kg)	Total VOC emissions to the atmosphere (kg)
24	Emerald Premium KDHP 20357	Fuji	11,241.5	562.1	10,679	8.7	929.1	650.4	624.4	278.7	26.0	304.7
25	Emerald Premium MXEH-M 2018	Fuji	1,665.4	83.3	1,582	22.3	352.8	247.0	237.1	105.8	9.9	115.7
					0		0.0	0.0	0.0	0.0	0.0	0.0
					0		0.0	0.0	0.0	0.0	0.0	0.0
	Total		12,906.9	645.3	12,262		1,281.9	897.3	861.5	384.6	35.9	**420.5**

Manual cleaning with solvent soaked rags with no drying

Assume 5% waste

MSDS no.	Identification (Name, number)	Manufacturer	Quantity used (Liters)	Quantity sent for disposal (Liters)	Total Quantity (kg)	VOC Content (%) - see MSDS	Total VOC consumed (kg)	Residual solvent in rags (kg)	Fugitive Emissions (kg)	Total VOC emissions to the atmosphere (kg)
20	V-313 Blue	Varn	25813.7	1290.685	19,618	97.77	19,180.9	9,590.5	9,590.5	9,590.5
21	V-324	Varn	6,245.3	312.2625	4,746	98.5	4,672.8	2,336.4	2,336.4	2,336.4
26	Rubber Rejuvenator	United Chemical Service	565.0	28.3	429	100.0	429.4	214.7	214.7	214.7
					0		0.0	0.0	0.0	0.0
					0		0.0	0.0	0.0	0.0
					0		0.0	0.0	0.0	0.0
	Total		32,624.0	1,631.2	24,794		24,283.1	12,141.6	12,141.6	**12,141.6**

Automatic solvent wash without rags (paper-rolls)

Assume 5% waste

MSDS no.	Identification (Name, number)	Manufacturer	Quantity used (L)	Quantity sent for disposal (L)	Total Quantity (kg)	VOC Content (%) - see MSDS	Total VOC consumed (kg)	VOC captured by the dryer (kg)	VOC destroyed by the incinerator (kg)	Fugitive Emissions (kg)	VOC emissions via the stack (kg)	Total VOC emissions to the atmosphere (kg)
22	Saphira PW-3207A	Nova Heidelberg	4,996.0	249.8	3,797	78.6	2,984.4	1,193.8	1,146.0	1,790.6	47.8	1,838.4
23	Prepac Auto wash	Baldwin	20.0	1	15	5.5	0.8	0.3	0.3	0.5	0.0	0.5
					0		0.0	0.0	0.0	0.0	0.0	0.0
					0		0.0	0.0	0.0	0.0	0.0	0.0
	Total		5,016.0	250.8	3,812		2,985.2	1,194.1	1,146.3	1,791.1	47.8	**1,838.9**

Conventional coating - non UV

Identification (Name, number)	Manufacturer	Quantity used (L)	Quantity sent for disposal (L)	Total Quantity (kg)	VOC Content (%) - see MSDS	Total VOC consumed (kg)	VOC captured by the dryer (kg)	VOC destroyed by the incinerator (kg)	VOC retained in the paper (kg)	Fugitive Emissions (kg)	VOC emissions via the stack (kg)	Total VOC emissions to the atmosphere (kg)
				0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
				0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

Coating - UV (UV coatings do not contain VOCs but this information is required for Transcontinental's environmental performance indicators project)

Identification (Name, number)	Manufacturer	Quantity used (kg)	Quantity sent for disposal (kg)
Total		0.0	0.0

Summary of Product Use	Quantity Purchased (kg)	Quantity sent for disposal (kg)	Quantity used on site (kg)
Conventional Inks	137,107.0	6,855.4	130,251.7
UV Inks	0.0	0.0	0.0
Fountain Solutions	12,906.9	645.3	12,261.5
Cleaning	30,112.0	1,505.6	28,606.4
Conventional Coating	0.0	0.0	0.0
UV Coatings	0.0	0.0	0.0
Total	**180,125.8**	**9,006.3**	**171,119.5**

CCME VOC Performance target

Substance	VOC content kg	metric tonnes
Inks - conventional	49629.0	49.6
Concentrated fountain solution	1281.9	1.3
Solvents - Manual clean	24283.1	24.3
Solvents - autowash	2985.2	3.0
Conventional coating - non UV	0.0	0.0
Total uncontrolled VOC amount	78179.3	78.2
Allowable fraction of the baseline uncontrolled VOC amount for a heatset web lithography :	0.1	
Allowable VOC fraction:	7817.9	7.8

Energy Use

LGM	2014

If you do not have access to the required data, contact the Environmental Coordinator.

Fossil Fuel

	Natural Gas		Propane (Bulk deliveries to fixed reservoir)		Propane (Cylinders/Tanks for lift trucks) 33 lbs cylinders nominal		Diesel (Fixed Sources)		Diesel (Mobile Sources)	
Consumption	**1,001,200.0**	m^3		L		cylinders		L		L
Total CO_2	1893.2692	tonnes	0	tonnes	0	tonnes	0	tonnes	0	tonnes
Total N_2O	0.0330396	tonnes	0	tonnes	0	tonnes	0	tonnes	0	tonnes
Total Methane	0.0370444	tonnes	0	tonnes	0	tonnes	0	tonnes	0	tonnes
Total equ. CO_2	1904.04	tonnes	0.00	tonnes	0.00	tonnes	0.00	tonnes	0.00	tonnes

	Heating Fuel		Incinerated Ink VOCs	
Consumption		L	**40122.9**	kg
Energy consumed			1.81	TJ
Total Carbon			36.12	tC
Total CO_2	0	tonnes	132.43	tonnes
Total N_2O	0	tonnes	0.00	tonnes
Total Methane	0	tonnes	0.02	tonnes
Total equ. CO_2	0.00	tonnes	133.16	tonnes

Electricity

	Electricity	
Consumption		KWh
GHG Intensity Factor	14	kg/MWh
Total equ. CO_2	0.00	tonnes

Greenhouse Gases Emitted

Scope 1 equ CO_2	2037.20	tonnes
Scope 2 equ CO_2	0.00	tonnes
Total equ CO_2	2037.2	tonnes

Scope 1: direct emissions from operations

Scope 2: indirect emissions from electricity use
This total does not include the Scope 3 indirect emissions of greenhouse gases such as:
- landfill wastes
- the incineration of hazardous wastes
- the transport of materials and people
Please refer GHG Protocol: Corporate Accounting and Reporting Standard for further definitions (http://www.ghgprotocol.org/)

CACs from the Combustion of Fossil Fuels

Emissions (kg)	Natural Gas	Propane	Diesel	Heating Oil	Total
CO	1,345.6	0.0	0.0	0.0	**1,345.6**
NO_x	1,601.9	0.0	0.0	0.0	**1,601.9**
SO_2	9.6	0.0	0.0	0.0	**9.6**
TPM	30.4	0.0	0.0	0.0	**30.4**
$PM_{2.5}$	30.4	0.0	0.0	0.0	**30.4**
PM_{10}	30.4	0.0	0.0	0.0	**30.4**
VOC	88.1	0.0	0.0	0.0	**88.1**

Note: Combustion gases and particulates produced by the incineration of the VOC have not been taken into account in the CAC calculation since preliminary estimates show that they are insignificant compared to the other sources of CACs.

Under the National Pollution Reporting Inventory (NPRI), only stationary sources of emissions are to be accounted for when calculating CACs. Hence, mobile sources have not been included.

References and Factors Used

Emission Factor ~~Retention Factors~~	Coldset	Heatset
Inks	0.05	0.8
Fountain solution	1	1
Cleaning solvent	0.5	0.5
Conventionnal coating	0.05	0.7
Factors for the amount of emissions captured by the dryers		
Inks		1
Fountain solution		0.7
Automatic cleaning		0.4
Coating		1

Specific Gravity
1.1
1
0.8
1.07

These emission factors are used for standard products of the printing industry. These factors may vary for specific products. New factors have been used in this 2008 calculation as new data has been published.
Source: Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing
http://www.epa.gov/ttn/caaa/t1/ctg/litho_print_ctg_092906.pdf

CAC Factors	Natural Gas (g/m^3)	Propane (g/L)	Diesel (g/L)	Heating Oil (kg/kL)
CO	1.344	0.899	15	0.6
NO_x	1.6	1.5577	70	2.9
SO_2	0.0096	0.002	4.6	17
TPM	0.0304	0.08	5	0.2396
$PM_{2.5}$	0.0304	0.07	5	0.2396
PM_{10}	0.0304	0.07	5	0.2396
VOC	0.088	0.1198	5.56	0

Sources
For Natural Gas, propane and diesel: AP 42, Volume I, Fifth Edition http://www.epa.gov/ttn/chief/ap42
For Heating Oil: NPI Emission Estimation Technique Manual for combustion in boilers - Section 3.4 (Australian Government) http://www.npi.gov.au/handbooks/approved_handbooks/fboilers.html

Electricity GHG Intensity Factors	OUT OF DATE
Province - State	**CO_2e (kg/MWh)**
Newfoundland	31
Prince Edward Island	252
Nova Scotia	771
New Brunswick	394
Quebec	9.1
Ontario	220
Manitoba	14
Saskatchewan	822
Alberta	882
British Columbia	17
Yukon/NWT/Nunavut	30

Sources :
For Canada : http://www.ec.gc.ca/pdb/ghg/inventory_report/2005_report/ta9_6_eng.cfm

Fuel GHG Factors	CO_2	N_2O	CH_4
	(kg/unit fuel)	**(kg/unit fuel)**	**(kg/unit fuel)**
Natural Gas (m^3)	1.891	0.000033	0.000037
Propane (L)	1.5	0.000108	0.000024
Diesel (L)	2.73	0.0004	0.00013
Heating Fuel (L)	2.83	0.000031	0.000006

Source : Environment Canada
http://www.ec.gc.ca/pdb/ghg/inventory_report/2005_report/a12_eng.cfm#a12_1

Global Warming Potential	
	100 years
CO_2	**1**
Methane	25
N_2O	298

Source: International Panel on Climate Change (IPCC) Fourth Assessment Report (2007)
http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch02.pdf

To convert VOC concentrations into a % by weight

Enter the VOC concentration of the product into the appropriate box in column A and the specific gravity of the product into Column B. If you have no information on the specific gravity, use the default value for the product listed in the References sheet. (The specific gravity is the density of the product relative to water which has a density of 1 kg / litre).

g/l	Specific gravity	wt %
		#VALUE!

Lb/US gallons	Specific gravity	wt %
		#VALUE!

Lb / Imperial gallons	Specific gravity	wt %
		#VALUE!

Propane Weight to Volume Conversion

lb	L
1	0.907
33	29.932

Other Volume Conversion Factors

US Gallons	**m^3**
1	0.002785

APPENDIX C

Correspondence from Flint regarding FPSL substances present in inks supplied to LGM

September 29, 2014

Mr. Tim Hopper
Transcontinental Printing
737 Moray St.
Winnipeg, MB
R3J 3S9

RE: Canadian Federal Priority Substances List

Flint Group Formulas: FTCN203090, FTCN223090, FTCN243090, FTCN273090, FTCN204400, FTCN224400, FTCN244400 & FTCN274400

Flint Group North America Corporation (Flint Group) has prepared this letter to address the request regarding the Canadian Federal Priority Substance List for the products listed above that Flint Group supplies to Transcontinental Printing.

With exception to the items below, there does not appear to be any reportable substances listed that are part of the formula structure for the above mentioned Flint Group products.

Flint Group Formula	CAS #	CAS Description	Weight % of Formula
FTCN273090	10043-01-3	Aluminum Sulfate	0.20%

Should you have any questions or concerns I can be reached at 905-761-3120.

Respectfully,

Jeff Adamson

North America Regional Safety, Health & Environmental Manager
Jeff.adamson@flintgrp.com

Ec. David Earl
David Crate

Flint Group
485 Millway Ave
Concord, Ontario
Canada L4K 3V4

T +1 905-761-3120
F +1 905-660-0364
www.flintgrp.com

APPENDIX D

Transcontinental's Guidelines for the reduction of volatile organic compounds

Guidelines for the Reduction of Volatile Organic Compounds (VOC)

What are VOC?

Volatile organic compounds (VOC) are organic compounds containing one or more carbon atoms that have high vapour pressures. Therefore, they evaporate readily to the atmosphere. In the environment, they react with other pollutants in the presence of sunlight to form ground level ozone, which in turn combines with fine particles to form smog. Smog is known to cause serious health effects as well as harmful environmental effects. VOC are listed as a group in Canada's List of Toxic Substances (Schedule 1 of the Canadian Environmental Protection Act, 1999); as such, VOC are targeted for reduction and further control through legislation.

Most VOC produced by man's activities come from:

- transportation (in exhaust fumes, fuelling activities and spills);
- solvent in consumer and commercial products.

VOC in the Printing Sector

The printing industry accounts for roughly 10% of the total Canadian solvent VOC emissions. Most emissions within a printing plant come from the pressroom, while pre-press and binding operations are smaller VOC sources.

The three main sources of VOC emissions from offset process printing are:

- **Inks (25%)** - Many of the inks used in printing are oil-based and contain significant amounts of VOC. Essentially, all weight lost when the wet ink dries on the printed substrate is VOC. The amount of VOC emitted from the drying ink can vary from 5% (coldset) to around 80% (heatset). Solvents evaporated in heatset operations are sent to get destructed by the incinerator, which typically destroys over 95% of the VOC.
- **Fountain Solution (15%)** – While water is the largest component of fountain solution, alcohol is usually added at a 5% volume in order to reduce surface tension and increase viscosity. With a high volatility rate (100% VOC), alcohol creates emissions and many substitutes have been created over the past decade in order to dramatically lower the creation of VOC by fountain solution. Nevertheless, around 15% of VOC emissions from the printing process come from this product.
- **Cleaning Materials (60%)** - At the end of print runs, cleaning materials are used to wash the blankets, rollers and outside of presses, whether manually using rags or using automatic blanket wash systems. The solvents used are often composed of 100% VOC, although certain low-VOC options are also available on the market. These VOC are usually left to evaporate in the facility during rag handling and escape to the environment as fugitive emissions. This represents the most important area of VOC emissions during the printing process and therefore where the biggest potential for reduction lies.

VOC Emission Tracking

Since 2002, Canadian TC Transcontinental facilities have been calculating their VOC emissions and, when over the reporting threshold, have submitted the VOC information to Environment Canada through the National Pollutant Release Inventory. Over the years, a computer program was created in order to use the quantities of inks, solvents and other chemical products bought by each facility to calculate VOC emissions. This program uses parameters described in the *Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing* (EPA, 2006), such as ink retention rates on paper and chemical destruction rate through incineration.

As part of its sustainability initiatives, TC Transcontinental has chosen VOC emissions as one of its key performance indicators; therefore, all facilities, including smaller and non-Canadian facilities, have been included in the overall yearly VOC calculations.

Reduction of VOC Emissions

The three mechanisms to reduce VOC emissions from offset printing are as follows:

- Material reformulation or substitution;
- Add-on controls and process modification;
- Change in work practices.

Material Reformulation and Substitution

The simplest way to reduce VOC emissions is to act at the source by substituting products to their low-VOC equivalent, when economically feasible and tested on the equipment. The table below presents typical VOC content of the three main products and guidelines to obtain potential emission reduction.

Product	VOC Content	Reduction Potential
Inks	30-45% (Heatset) Below 20% (Coldset)	Facilities should discuss with their ink suppliers in order to test low-VOC alternatives (with greater proportion of vegetable oil), especially when using heatset inks where the reduction potential is greater.
Fountain Solution	15% average	Facilities should check the MSDS for a VOC content lower than 15%. Also, when dampening aids are needed in the process, alcohol should be substituted for products such as ethylene glycol.
Cleaning Materials	Usually 100%	The vast majority of solvents used for press cleaning and blanket washing contain 100% VOC and are the main source of VOC emissions. Many alternatives with lower VOC content are available and already in use across TC Transcontinental. When feasible, facilities should be aiming for cleaning materials containing less than 70% VOC.

Add-on Controls and Process Modification

In heatset printing, only 20% of the VOC from the inks is retained on the substrate (paper), while about 80% is volatilized in the dryer. Thus, to prevent excessive release to the environment, the dryers are equipped with control devices such as thermal or catalytic oxidizers, which achieve a 95% or greater VOC destruction efficiency. As stated in TC Transcontinental's *Corporate Directives Regarding the Preventive Maintenance of Equipment under Environmental Regulation*, it is the responsibility of each facility to establish a preventive maintenance program that ensures the oxidizers will stay in their original condition and maintain their optimal efficiency.

Also, while the VOC emissions from coldset printing are already less significant, the UV printing process can greatly reduce VOC emissions, as UV inks and varnishes do not contain any VOC. Indeed, instead of having solvents in the ink that evaporate into the air and absorb into the paper, UV inks dry through a photomechanical process; when the inks are exposed to ultraviolet lights they turn from a liquid, or paste, to a solid.

Switching to automatic press cleaning can also reduce the VOC emissions. Indeed, in some systems, the incinerator functions during the cleaning cycle, so about 40% of the VOC from the solvent are destroyed. Also, it may be possible to dilute the solvent with water in automatic press cleaning, therefore reducing the overall purchase of solvents.

Change in Work Practices

Products containing a high proportion of VOC such as solvent are prone to rapid evaporation due to high volatility. Therefore, best work practices to prevent evaporation from contact with ambient air can both help to reduce the loss in solvent (thus, the need for purchase) and better indoor air quality. The table below shows a series of recommendations on best practices during the handling of solvent or solvent containing materials.

Activity	Current Practice	Recommendation
Storing solvent	Solvents are usually stored in 45 gallon drums (205 litres)	Use larger containers, such as 1000 litre totes, to reduce the number of recipient changes and thus reduce the risks of spills. Each change causes VOC evaporation.
Getting the solvent to the press	Solvents are transferred to the press in an intermediary container and then transferred to another container once at the presses.	Use one container for transportation and use on the press, since each container transfer causes VOC evaporation. All containers should have lids.
Storing the solvent at the press	Solvents are stored in bench-cans with lids to reduce evaporation while allowing easy rag dipping. However, the cans often stay open between uses.	Close the containers between each use.  **Bench Can with Lid**

Transferring the solvent to the cleaning rags	The operator dips the rag in the bench-can. The rag is squeezed out to remove the excess. This action causes VOC evaporation.	Dose the quantity of solvent used by using a can with a measuring device, such as a plunger can. In this manner, the rag will not contain any excess solvent.  **Plunger Can**
Squeezing rags to remove excess solvent	Excess solvent is dripped onto a dry rag left on a worktable. The recovered solvent evaporates over the course of the day.	If there is excess solvent, let it drip into a container with a lid. This recovered solvent can then be used for the next cleaning.
Cleaning the press	Cleaning is often done with very wet rags. The excess solvent then evaporates.	The amount of solvent on the rag should be optimized to minimize the amount used without compromising the cleaning effectiveness. The use of a plunger can would allow a determined quantity to be used.
Squeezing rags to remove used solvent	Once the rolls have been cleaned, any excess solvent still in the rag is squeezed onto a dry rag placed on the worktable. The recovered solvent evaporates over the course of the day.	If there is excess solvent, let it drip into a container with a lid. This recovered solvent can then be used for the next cleaning.
Storing used rags at the workbench	The rags are first placed at the workbench in such a way as to allow any remaining solvent to evaporate, then they are transferred to containers with lids.	The evaporation of solvent from the rags into the working environment should be prevented. Rags should be deposited directly into lidded containers. These should be emptied at the end of every work shift. 

Storing rags prior to transport off-site	In some situations, rags are stored directly in the empty containers provided by the transporter, several days prior to being transported off site.	 The use of flame-proof cabinets for flammable liquids reduces the risk of fire and the release of VOC emissions. The unit should have a removable compartment with a grill at the bottom of the cabinet to collect excess solvent. It must also be aerated to prevent the risk of explosion. The use of the cabinet allows any solvent that is still liquid to drip to the bottom for recovery, while minimizing further evaporation by reducing airflow around the rags. It avoids solvent accumulating in the bottom of the transport container, which would add to the weight for transport and be discarded or evaporated later when the rags are cleaned. To recover the maximum amount of solvent, the wettest rags should be placed on the lowest wire shelf. As a new batch of rags arrives, the rags on the lowest shelf are moved up. Rags on the top shelf can then be transferred to the transport container.

References

Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing, EPA (2006).

Corporate Directives Regarding the Preventive Maintenance of Equipment under Environmental Regulation, TC Transcontinental (2008).

Environmental Code of Practice for the Reduction of Volatile Organic Compounds Emissions from the Commercial/Industrial Printing Industry, Canadian Council of Ministers of the Environment (1999).

List of Toxic Substances, Canadian Environmental Protection Act (1999).

APPENDIX E

Material safety data sheets

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL MID TACK BLACK
Product Code: FTCN204400
MSDS Code: MSD-00448313
Revision Number: 29
Revision Date: 2012-05-07 09:10:47

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Linseed oil	0.5 - 1.5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Routes of Entry: Inhalation, Ingestion, Skin contact, Eye contact
Medical Conditions Aggravated: No medical conditions affected by exposure.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: May be mildly irritating to the mouth, throat and stomach.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation: Upon prolonged and/or repeated exposure, can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.

Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No adverse health affects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section VIII of this MSDS.

VII. HANDLING AND STORAGE

Handling Precautions:	Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Ground and bond containers when transferring material As with all chemicals, good industrial hygiene practices should be followed when handling this material. Remove contaminated clothing and wash before reuse.

Use with adequate ventilation
Use non-sparking tools when opening or closing containers.

Storage Conditions: Store in a cool dry place. Isolate from incompatible materials. Keep away from heat, sparks, and flame. Store in a tightly closed container. Do not store in direct sunlight.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.

Respiratory Protection: General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.

Eye Protection: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Linseed oil		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	36.66
Volatiles, % by vol:	45.77
Volatile Organic Chemicals % by wt:	36.53
Volatile Organic Chemicals % by vol:	45.63
VOC lb/gal	3.04
VOC lb/gal (less water):	3.04
Solids % by weight:	63.34
Solids % by volume	54.23
Specific Gravity:	1.00
Bulk Density (Lb/Gal):	8.33

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Incompatibility: Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Linseed oil	No data available

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Not on list		NPRI (Cdn)	
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

References:

Disclaimer: Flint Group has prepared this Material Safety Data Sheet (“MSDS”) in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL MID TACK CYAN
Product Code: FTCN224400
MSDS Code: MSD-00922423
Revision Number: 17
Revision Date: 2013-10-18 09:41:01

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Kerosene (petroleum), Hydrodesulfurized	10 - 30
Straight-Run Middle Distillate (Petroleum)	0.5 - 1.5
Solvent naptha (petroleum) heavy aromatic C9 - C11	0.1 - 1

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Routes of Entry: Skin contact, Eye contact, Ingestion, Inhalation
Medical Conditions Aggravated: Respiratory disease including asthma and bronchitis

Immediate (Acute) Health Effects by Route of Exposure
Inhalation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Harmful! Can cause systemic damage.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: Aspiration of material into the lungs can cause chemical pneumonitis.

Long-Term (Chronic) Health Effects
Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory

	irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure.
Skin Contact:	Upon prolonged or repeated exposure, minimal hazard in normal industrial use. May cause gastrointestinal discomfort.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.
Autoignition Temperature:	Not determined deg. C deg F

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Mildly irritating material. Avoid unnecessary exposure. Do not get in eyes, on skin or clothing.

Wash thoroughly after handling.

As with all chemicals, good industrial hygiene practices should be followed when handling this material.
Remove contaminated clothing and wash before reuse.
Ground and bond containers when transferring material

Storage Conditions: Store in a cool dry place. Isolate from incompatible materials. Store in a tightly closed container. Keep away from sources of ignition.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: General room ventilation might be required to maintain operator comfort under normal conditions of use.

Respiratory Protection: General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.

Eye Protection: Wear safety glasses with side shields when handling this product. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Kerosene (petroleum), Hydrodesulfurized Straight-Run Middle Distillate (Petroleum) Solvent naptha (petroleum) heavy aromatic C9 - C11		200 mg/m3 TWA		

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	41.67
Volatiles, % by vol:	50.2
Volatile Organic Chemicals % by wt:	38.06
Volatile Organic Chemicals % by vol:	46.64
VOC lb/gal	3.11
VOC lb/gal (less water):	3.21
Solids % by weight:	58.33
Solids % by volume	49.8
Boiling Point:	Not determined deg. C deg. F
Specific Gravity:	0.98

Bulk Density (Lb/Gal): 8.16

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Incompatibility: Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Kerosene (petroleum), Hydrodesulfurized	Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 1700 mg/m3 4 h
Solvent naptha (petroleum) heavy aromatic C9 - C11	No data available

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	3.2
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

RETAIL MID TACK CYAN

Disclaimer: Flint Group has prepared this Material Safety Data Sheet (“MSDS”) in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.
MONTREAL

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL MID TACK MAGENTA
Product Code: FTCN244400
MSDS Code: MSD-00952989
Revision Number: 18
Revision Date: 2013-12-20 09:07:00

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Kerosene (petroleum), Hydrodesulfurized	10 - 30
calcium resinate	1 - 5
Straight-Run Middle Distillate (Petroleum)	1 - 5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Routes of Entry: Inhalation, Ingestion, Skin contact, Eye contact
Medical Conditions Aggravated: No medical conditions affected by exposure.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache. Harmful! Can cause systemic damage.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: Mildly irritating to mouth, throat, and stomach. Can cause abdominal discomfort. Aspiration of material into the lungs can cause chemical pneumonitis. Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than

0.1% is mutagenic or genotoxic.

Inhalation: Upon prolonged and/or repeated exposure, can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure.

Skin Contact: Upon prolonged or repeated contact, can cause minor skin irritation, defatting, and dermatitis. Upon prolonged or repeated exposure, minimal hazard in normal industrial use. May cause gastrointestinal discomfort.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Eyes: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

Ingestion: Minimal risk of harm if swallowed. Do not induce vomiting. Seek medical attention immediately. Provide medical care provider with this MSDS. No hazard expected under normal industrial use. If a large quantity is swallowed, seek medical attention. Do not induce vomiting.

V. FIRE FIGHTING MEASURES

Flammability Summary: Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.

Fire and/or Explosion Hazards: Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire. Use process enclosures to control the level of dust in the air.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Flash Point: 93 C (200 F) and greater

Firepoint: Firepoint not determined.

Autoignition Temperature: Not determined deg. C deg F

VI. ACCIDENTAL RELEASE MEASURES

Personal No health affects expected from the clean-up of this material if contact can be

Precautions and Equipment:	avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material
Storage Conditions:	Store in a cool dry place. Isolate from incompatible materials. Store in a tightly closed container. Keep away from heat, sparks, and flame.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Respiratory Protection:	No respiratory protection required under normal conditions of use.
Eye Protection:	Wear safety glasses with side shields when handling this product. Have an eye wash station available.
Skin Protection:	Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Kerosene (petroleum), Hydrodesulfurized calcium resinate Straight-Run Middle Distillate (Petroleum)		200 mg/m3 TWA		

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	37.12
Volatiles, % by vol:	45.88
Volatile Organic Chemicals % by wt:	36.96
Volatile Organic Chemicals % by vol:	45.71
VOC lb/gal	3.05

VOC lb/gal (less water):	3.05
Solids % by weight:	62.88
Solids % by volume	54.12
Boiling Point:	Not determined deg. C deg. F
Specific Gravity:	0.99
Bulk Density (Lb/Gal):	8.25

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Materials to Avoid/Chemical Incompatibility:	Strong oxidizing agents.
Hazardous Decomposition Products:	Toxic gases

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Kerosene (petroleum), Hydrodesulfurized	Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg
calcium resinate	No data available
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 1700 mg/m3 4 h

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product:	Spent or discarded material is not expected to be a hazardous waste.
Disposal Methods:	Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status	All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	4.25
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section

Not on list

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.
ETOWN

485 Millway Av.
Concord, ONT L4K-3V4

For Product Questions call: (514) 731-9405
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	RETAIL MID-TACK HEATSET YELLOW
Product Code:	FTCN274400
MSDS Code:	MSD-00982791
Revision Number:	10
Revision Date:	2013-07-02 14:24:02

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	**%**
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	0.5 - 1.5
Straight-Run Middle Distillate (Petroleum)	0.5 - 1.5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation:	Can cause minor respiratory irritation.
Skin Contact:	Can cause minor skin irritation.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion:	No hazard in normal industrial use.

Long-Term (Chronic) Health Effects

Reproductive and Developmental:	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Skin Contact:	Upon prolonged or repeated exposure, no hazard in normal industrial use.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by

weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen.

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin Contact: Wash with soap and water.

Ingestion: No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary: Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.

Fire and/or Explosion Hazards: Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire. It has been reported that diarylide pigments may be subject to breakdown at temperatures above 200C (392F). This decomposition may produce monoazo dyes and 3,3'dichlorobenzidine. 3,3'dichlorobenzidine is a suspect human carcinogen. In the majority of printing inks and coatings systems, temperatures are lower and this thermal breakdown does not occur. It is recommended that diarylide pigments not be used under conditions where thermal breakdown can occur.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Flash Point: 93 C (200 F) and greater

Firepoint: Firepoint not determined.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions: Mildly irritating material. Avoid unnecessary exposure. Do not get in eyes, on skin or clothing.
Wash thoroughly after handling.
Ground and bond containers when transferring material
As with all chemicals, good industrial hygiene practices should be followed

when handling this material.

Storage Conditions: Store in a cool dry place. Isolate from incompatible materials.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: No respiratory protection required under normal conditions of use.

Eye Protection: Wear safety glasses with side shields when handling this product. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate		No TLV	No STEL	Not on list
Straight-Run Middle Distillate (Petroleum)		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	43.66
Volatiles, % by vol:	51.88
Volatile Organic Chemicals % by wt:	43.4
Volatile Organic Chemicals % by vol:	51.63
VOC lb/gal	3.43
VOC lb/gal (less water):	3.44
Solids % by weight:	56.34
Solids % by volume	48.12
Specific Gravity:	0.95
Bulk Density (Lb/Gal):	7.91

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Strong oxidizing agents.

Incompatibility:

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Oral LD50 Rat >3200 mg/kg
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 1700 mg/m3 4 h

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	4.65
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL NEWS HIGH SPEED BLACK
Product Code: FTCN203090
MSDS Code: MSD-00992487
Revision Number: 4
Revision Date: 2013-07-02 13:50:01

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Straight-Run Middle Distillate (Petroleum)	1 - 5
Linseed oil	0.5 - 1.5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Routes of Entry: Inhalation, Ingestion, Skin contact, Eye contact
Medical Conditions Aggravated: No medical conditions affected by exposure.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: No hazard in normal industrial use.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation: Upon prolonged and/or repeated exposure, can cause minor respiratory

	irritation, dizziness, weakness, fatigue, nausea, and headache.
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Mildly irritating material. Avoid unnecessary exposure. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Do not get in eyes, on skin or clothing.

Storage Conditions: Store in a cool dry place. Isolate from incompatible materials. Store in a tightly closed container. Keep away from heat, sparks, and flame.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.

Respiratory Protection: General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.

Eye Protection: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Straight-Run Middle Distillate (Petroleum)		No TLV	No STEL	Not on list
Linseed oil		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	37.24
Volatiles, % by vol:	47.25
Volatile Organic Chemicals % by wt:	33.64
Volatile Organic Chemicals % by vol:	43.29
VOC lb/gal	2.91
VOC lb/gal (less water):	2.95
Solids % by weight:	62.76
Solids % by volume	52.75
Specific Gravity:	1.04
Bulk Density (Lb/Gal):	8.66

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Incompatibility: Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 1700 mg/m3 4 h
Linseed oil	No data available

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Not on list		NPRI (Cdn)	
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet (“MSDS”) in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL NEWS HIGH SPEED CYAN
Product Code: FTCN223090
MSDS Code: MSD-00993610
Revision Number: 4
Revision Date: 2013-07-02 13:41:54

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Straight-Run Middle Distillate (Petroleum)	0.5 - 1.5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Immediate (Acute) Health Effects by Route of Exposure
Inhalation: Can cause minor respiratory irritation.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: No hazard in normal industrial use.

Long-Term (Chronic) Health Effects
Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Skin Contact:

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA No **NTP** No **IARC 1 & 2A** No **IARC 2B** No **NIOSH** No

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Mildly irritating material. Avoid unnecessary exposure. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Ground and bond containers when transferring material As with all chemicals, good industrial hygiene practices should be followed when handling this material. Remove contaminated clothing and wash before reuse.
Storage Conditions:	Store in a cool dry place. Isolate from incompatible materials. Store in a tightly closed container. Keep away from heat, sparks, and flame.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.
Respiratory Protection:	General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.
Eye Protection:	Wear safety glasses with side shields when handling this product. Have an eye wash station available.
Skin Protection:	Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Straight-Run Middle Distillate (Petroleum)		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	41.63
Volatiles, % by vol:	50.58
Volatile Organic Chemicals % by wt:	39.28
Volatile Organic Chemicals % by vol:	48.25
VOC lb/gal	3.21
VOC lb/gal (less water):	3.27
Solids % by weight:	58.37
Solids % by volume	49.42
Specific Gravity:	0.98
Bulk Density (Lb/Gal):	8.16

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Materials to Avoid/Chemical Incompatibility:	Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat

1700 mg/m3 4 h

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	2.84
Not on list		PROP 65	
P0222 Proprietary Copper Salt (Copper Compound)	P0222	SARA 313	0.32
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL NEWS HIGH SPEED MAGENTA
Product Code: FTCN243090
MSDS Code: MSD-00993616
Revision Number: 3
Revision Date: 2013-07-02 14:07:02

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
calcium resinate	1 - 5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Routes of Entry: Inhalation, Ingestion, Skin contact, Eye contact
Medical Conditions Aggravated: No medical conditions affected by exposure.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause minor irritation, tearing and reddening.
Ingestion: Mildly irritating to mouth, throat, and stomach. Can cause abdominal discomfort. Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation: Upon prolonged and/or repeated exposure, can cause minor respiratory

	irritation, dizziness, weakness, fatigue, nausea, and headache.
Skin Contact:	Upon prolonged or repeated contact, can cause minor skin irritation, defatting, and dermatitis.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	Minimal risk of harm if swallowed. Do not induce vomiting. Seek medical attention immediately. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material.

Remove contaminated clothing and wash before reuse.

Storage Conditions: Store in a cool dry place. Isolate from incompatible materials. Store in a tightly closed container. Keep away from heat, sparks, and flame.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.

Respiratory Protection: General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.

Eye Protection: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
calcium resinate		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	42.52
Volatiles, % by vol:	50.34
Volatile Organic Chemicals % by wt:	42.38
Volatile Organic Chemicals % by vol:	50.21
VOC lb/gal	3.35
VOC lb/gal (less water):	3.35
Solids % by weight:	57.48
Solids % by volume	49.66
Specific Gravity:	0.95
Bulk Density (Lb/Gal):	7.91

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Strong oxidizing agents.

Incompatibility:

Hazardous Decomposition Products: Toxic gases

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
calcium resinate	No data available

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Not on list		CERCLA	
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	4.00
Not on list		PROP 65	
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO

Varn International, Inc., *a Flint Group Company*
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Plymouth, MI 48180

For Product Questions call:	(800) 336-VARN(8276)
For Health and Safety Questions call:	(800) 336-VARN(8276)
After Hours Emergency Health/Safety Questions:	(800) 391-0698 Prosar (US/Canada)
24 Hour Emergency Spill Contact call:	(800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	WASH V-313 BLUE
Product Code:	650-B090020
MSDS Code:	MSD-00940136
Revision Number:	2
Revision Date:	2011-07-15 11:42:35

II. COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%
64742-47-8	Hydrotreated Light Distillate (Petroleum)	60 - 99
64742-95-6	Solvent naphtha (petroleum), light arom.	1 - 5
95-63-6	1,2,4-Trimethylbenzene	1 - 5

Please see Section VIII for product and component exposure guidelines.
Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).

III. HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 2 **Reactivity:** 0

This product falls under the following WHMIS class:
B3

Routes of Entry:	Inhalation, Ingestion, Skin contact, Eye contact
Target Organs:	Central Nervous System, Lungs, Eyes, Skin, Blood, Respiratory Tract
Medical Conditions Aggravated:	Lung disease, Eye disease, Skin disease including eczema and sensitization, Respiratory disease including asthma and bronchitis

Immediate (Acute) Health Effects by Route of Exposure

Inhalation:	Can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.
Skin Contact:	Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis. Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects

Reproductive and Developmental:	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation:	Upon prolonged and/or repeated exposure, can cause minor respiratory irritation, dizziness, weakness, fatigue, nausea, and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure.
Skin Contact:	Upon prolonged or repeated contact, can cause minor skin irritation, defatting, and dermatitis.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	No	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this MSDS. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible NFPA II (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used to extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.
Fire and/or Explosion Hazards:	Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

Flash Point:	38 C (100 F) - 60 C (140F)
Firepoint:	Firepoint not determined.
Upper Flammable/Explosive Limit, % in air:	6.2
Lower Flammable/Explosive Limit, % in air:	1.2

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Product Use:	Press Wash
Handling Precautions:	Mildly irritating material. Avoid unnecessary exposure. Ground and bond containers when transferring material Avoid contact with material, avoid breathing dusts or fumes, use only in a well ventilated area.
Storage Conditions:	Store in a cool dry place. Isolate from incompatible materials. Do not store in direct sunlight. Keep away from heat, sparks, and flame. Store in a tightly closed container.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.
Respiratory Protection:	General or local exhaust ventilation is the preferred means of control. If general or local exhaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.
Eye Protection:	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
Skin Protection:	Not normally considered a skin hazard. Where use can result in skin contact, practice good personal hygiene and wear a barrier cream and/or impervious surgical style gloves. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Wear impervious material. Butyl rubber or Nitrile

Exposure Guidelines:

CAS#	Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
64742-47-8	Hydrotreated Light Distillate (Petroleum)		No TLV	No STEL	Not on list
64742-95-6	Solvent naphtha (petroleum), light arom.		No TLV	No STEL	Not on list
95-63-6	1,2,4-Trimethylbenzene		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Blue
Odor:	Petroleum or solvent
Solubility in Water:	Emulsifies
Vapor Pressure (mmHg @ 20 deg. C):	2.8

Volatile Organic Chemicals % by wt:	97.77
VOC lb/gal	6.36
Specific Gravity:	0.78
Bulk Density (lbs/Gal):	6.5
Bulk Density (kg/L):	0.78

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.
Materials to Avoid/Chemical Incompatibility:	Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

CAS#	Chemical Name	LD50/LC50
64742-47-8	Hydrotreated Light Distillate (Petroleum)	No data available
64742-95-6	Solvent naphtha (petroleum), light arom.	Inhalation LC50 Rat >5.2 mg/L 4 h; Inhalation LC50 Rat 3400 ppm 4 h; Oral LD50 Rat 8400 mg/kg; Dermal LD50 Rabbit >2000 mg/kg
95-63-6	1,2,4-Trimethylbenzene	ORAL, RAT: LD50 = 5 GM/KG; INHALATION, RAT: LC50 = 18 GM/M3/4H

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product:	Spent or discarded material may be a hazardous waste.
Disposal Methods:	Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status	All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Benzene, dimethyl-	1330-20-7	CERCLA	0.23
Benzene, (1-methylethyl)-	98-82-8	CERCLA	0.16
Petroleum naphtha	64742-95-6	NPRI (Cdn)	3.52
1,2,4-Trimethylbenzene	95-63-6	NPRI (Cdn)	2.49
Benzene, (1-methylethyl)-	98-82-8	PROP 65	0.16
1,2,4-Trimethylbenzene	95-63-6	SARA 313	2.49
Xylene (mixed isomers)	1330-20-7	SARA 313	0.23
Cumene	98-82-8	SARA 313	0.16
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. TRANSPORTATION INFORMATION

49CFR/TDG - Non-bulk:	GROUND SHIPMENTS NOT REGULATED IN PACKAGINGS OF 119 GAL (450 L) OR LESS.
49CFR/TDG - Bulk:	UN1993, FLAMMABLE LIQUID, N.O.S. (NAPHTHA), 3, PGIII, ERG128
IATA - Limited Quantity:	LIMITED QUANTITY EXCEPTION MAY BE USED IF EACH INNER PACKAGING IS 1.3 GAL (5 L) OR LESS. ADD "LTD QTY" TO DESCRIPTION.
IATA - Non-bulk:	UN1993, FLAMMABLE LIQUID, N.O.S. (NAPHTHA), 3, PGIII, ERG128
IATA - Bulk:	UN1993, FLAMMABLE LIQUID, N.O.S. (NAPHTHA), 3, PGIII, ERG128
IMDG - Non-bulk:	REGULATED. REFER TO BILL OF LADING.

XV. ADDITIONAL INFORMATION

References:

Disclaimer: Varn International, Inc. a Flint Group Company has prepared this Material Safety Data Sheet (“MSDS”) in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

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For Product Questions call:	(800) 336-VARN(8276)
For Health and Safety Questions call:	(800) 336-VARN(8276)
After Hours Emergency Health/Safety Questions:	(800) 391-0698 Prosar (US/Canada)
24 Hour Emergency Spill Contact call:	(800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	WASH V-324
Product Code:	650-B090019
MSDS Code:	MSD-00940135
Revision Number:	1
Revision Date:	2011-03-02 21:10:41

II. COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%
64742-48-9	Naphtha (petroleum), hydrotreated heavy	60 - 99
64742-94-5	Heavy Aromatic Solvent Naphtha (Petroleum)	5 - 10
34590-94-8	Dipropylene Glycol Monomethyl Ether	3 - 7
91-20-3	Naphthalene	0.1 - 1

Please see Section VIII for product and component exposure guidelines.
Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).

III. HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 2 **Reactivity:** 0

This product falls under the following WHMIS class:
B3

Routes of Entry:	Ingestion, Inhalation, Skin contact, Eye contact
Target Organs:	Lungs, Eyes, Central Nervous System, Respiratory Tract
Medical Conditions Aggravated:	Eye disease, Respiratory disease including asthma and bronchitis

Immediate (Acute) Health Effects by Route of Exposure

Inhalation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Skin Contact:	Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact:	Can cause minor irritation, tearing and reddening.
Ingestion:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis. Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects

Reproductive and Developmental:	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. Upon prolonged or repeated exposure, minimal hazard in normal industrial use. May cause gastrointestinal discomfort.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	**NTP**	Yes	**IARC 1 & 2A**	No	**NIOSH**	No
				IARC 2B	Yes		

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists. Wash clothing before reuse.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this MSDS. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible NFPA IIIA (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a water stream directly into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited if preheated to temperatures above the flash point in the presence of a source of ignition. Combustible Liquid. Can form explosive mixtures at temperatures at or above the flash point.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

Flash Point:	>60 C (140 F) - < 93 C (200 F)
Firepoint:	Firepoint not determined.
Upper Flammable/Explosive Limit, % in air:	5.0
Lower Flammable/Explosive Limit, % in air:	0.8

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Product Use:	Press Wash
Handling Precautions:	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Ground and bond containers when transferring material Use with adequate ventilation
Storage Conditions:	Store in a cool dry place. Isolate from incompatible materials.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Respiratory Protection:	General or local exhaust ventilation is the preferred means of control. If general or local exaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.
Eye Protection:	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
Skin Protection:	Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Wear impervious material. Butyl rubber or Nitrile

Exposure Guidelines:

CAS#	Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
64742-48-9	Naphtha (petroleum), hydrotreated heavy		No TLV	No STEL	Not on list
64742-94-5	Heavy Aromatic Solvent Naphtha (Petroleum)		No TLV	No STEL	Not on list
34590-94-8	Dipropylene Glycol Monomethyl Ether	100 ppm TWA; 600 mg/m3 TWA prevent or reduce skin absorption	100 PPM TWA; 606 MG/M3 TWA	150 PPM STEL; 909 MG/M3 STEL	600 ppm IDLH
91-20-3	Naphthalene	10 PPM TWA; 50 MG/M3 TWA	10 PPM TWA; 52 MG/M3 TWA	15 PPM STEL; 79 MG/M3 STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Blue
Odor:	Petroleum or solvent
Solubility in Water:	Emulsifies

Vapor Pressure (mmHg @ 20 deg. C):	0.5
Volatile Organic Chemicals % by wt:	98.45
VOC lb/gal	6.65
Specific Gravity:	0.81
Bulk Density (lbs/Gal):	6.75
Bulk Density (kg/L):	0.81

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.
Materials to Avoid/Chemical Incompatibility:	Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

CAS#	Chemical Name	LD50/LC50
64742-48-9	Naphtha (petroleum), hydrotreated heavy	Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >3160 mg/kg
64742-94-5	Heavy Aromatic Solvent Naphtha (Petroleum)	Inhalation LC50 Rat >590 mg/m3 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg
34590-94-8	Dipropylene Glycol Monomethyl Ether	Oral LD50 Rat 5230 mg/kg; Dermal LD50 Rabbit 9500 mg/kg
91-20-3	Naphthalene	ORAL, RAT: LD50 = 490 MG/KG; INHALATION, RAT: LC50 = >340 MG/M3/1H; ORAL, MOUSE: LD50 = 533 MG/KG; SKIN, RABBIT: LD50 = >20 GM/KG

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product:	Spent or discarded material is not expected to be a hazardous waste.
Disposal Methods:	Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status	All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Naphthalene	91-20-3	CERCLA	0.78
Hydrotreated heavy naphtha	64742-48-9	NPRI (Cdn)	83.9
Heavy aromatic solvent naphtha	64742-94-5	NPRI (Cdn)	7.09
Naphthalene	91-20-3	PROP 65	0.78
Naphthalene	91-20-3	SARA 313	0.78
1,2,4-Trimethylbenzene	95-63-6	SARA 313	0.13
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Dipropylene glycol monomethyl ether	Section 4, 1 % de minimus concentration

Naphthalene	Section 4, 0.1 % de minimus concentration

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. TRANSPORTATION INFORMATION

49CFR/TDG - Non-bulk:	GROUND SHIPMENTS NOT REGULATED IN PACKAGINGS OF 119 GAL (450 L) OR LESS.
49CFR/TDG - Bulk:	NA1993, COMBUSTIBLE LIQUID, N.O.S. (NAPHTHA), PGIII, ERG128
IATA - Non-bulk:	NOT REGULATED
IMDG - Non-bulk:	NOT REGULATED

XV. ADDITIONAL INFORMATION

References:

Disclaimer: Varn International, Inc. a Flint Group Company has prepared this Material Safety Data Sheet (“MSDS”) in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard (29 CFR 1910.1200) and the American National Standards Institute Standard for MSDSs (ANSI Z400.1)

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufactured For: **Heidelberg Canada** Graphic Equipment Limited Address: 6265 Kenway Drive Mississauga, Ontario L5T 2L3	Identity (trade name as used on label): **SAPHIRA PW-3207A** **Metering Roller Cleaner**
Date Prepared: 3/12/2013 Revision: 2	Prepared By: JMM
Information Calls: (866) 443-5811	DOT Emergency Response: (800) 424-9300

SECTION 2 – HAZARDS IDENTIFICATION

Emergency Overview: Clear, colorless liquid with solvent odour. Causes eye, skin and respiratory tract irritation. Can cause severe lung damage and may be fatal if swallowed. May cause CNS depression. Extremely flammable liquid and vapour. May cause flash fire. Vapours are heavier than air and may travel across the ground and reach remote ignition sources causing a flashback fire. During emergencies, wear equipment to protect eyes, skin and respiratory tract. Dike or absorb spills to keep material and run-off from entering sewers, drains or waterways.

Potential Health Effects:

Skin – Prolonged or repeated contact with liquid can cause defatting and drying of the skin, and can lead to irritation and/or dermatitis.

Eyes – Vapours are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness, and pain.

Inhalation – Inhalation of vapours irritates the respiratory tract. May cause headache, dizziness, anesthetic effects (CNS depression). Alcohol consumed before or after exposure may increase adverse effects.

Ingestion – May cause nausea, vomiting, diarrhea; possible chemical pneumonitis if aspirated into lungs.

Conditions Aggravated by Exposure: Chronic exposure may aggravate existing eye, skin or upper respiratory conditions.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	WT. %	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
ACETONE	67-64-1	10-20	1000	500 STEL=750	d
ISOPROPANOL (Synonyms: Isopropyl Alcohol, IPA)	67-63-0	5-15	400	400 STEL=500	d
ALIPHATIC PETROLEUM DISTILLATE	64742-89-8	70-80	Not Established	300	d

*See SECTION 15 – REGULATORY INFORMATION.

**Chemical Listed as Carcinogen or Potential Carcinogen: a = NTP b = IARC Monograph c = OSHA d = Not Listed e = Animal Data Only

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush with water for at least 15 minutes; seek medical attention.	**Ingestion:** Do NOT induce vomiting. Do NOT drink water. Seek immediate medical attention.
Skin Contact: Remove contaminated clothing; launder before re-use. Wash skin with soap and water; if irritated, seek medical attention.	**Inhalation:** Immediately remove to fresh air. Seek medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point and Method Used:	**Auto Ignition Temperature:**	**Explosion Limits:**
10^{o} F (TCC)	Not Established	% LEL – Not Established % UEL – Not Established

Extinguisher Media: Foam, dry chemical; use water spray to cool exposed surfaces.

OSHA Class IB Flammable Liquid. Evacuate area and fight fire from a safe distance if fire is contained in small area; otherwise, call the local fire department.

Unusual Fire & Explosion Hazards: Extremely flammable. Vapours are heavier than air and may accumulate in low or inadequately ventilated areas. Vapours may travel along the ground to be ignited at locations distant from handling site. Flashback or flame to the handling site may occur. Fire media run-off can damage the environment. Dike and collect media used to fight fire.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

For small incidental spills and leaks, wear protective gloves and eye protection. Stop source of leak or spill. Isolate area of spill by diking, and/or add dry absorbent to prevent it from entering sewers, drains or waterways. Clean up and place in an appropriate container for disposal. Wash all contaminated clothing before reuse; discard contaminated leather shoes.

For larger spill requiring emergency response, follow OSHA emergency response regulations and NIOSH recommendations. If possible, stop source of spill or release. Isolate the area of spill or release by diking to prevent it from entering sewers, drains or waterways. Clean up and place in an appropriate container for disposal.

SECTION 7 – HANDLING/STORAGE

Avoid contact with eyes, skin or clothing. Avoid breathing mist or vapour. Wash thoroughly after handling. Do not eat, drink or smoke in work areas. Use only with adequate ventilation. Avoid using in areas with open flames, welding arcs, extreme heat, or sparks. Keep container closed when not in use. Transfer to bonded and grounded containers only. Avoid storage with acids/bases and strong oxidizers. Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapour, liquid, and/or solid), all hazard precautions given in this data sheet must be observed.

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Ventilation: Good, general ventilation should be sufficient for most operations. Ten or more room air changes per hour containing a minimum of 15% fresh air are recommended.

Personal Protection: Safety glasses and gloves impervious to the hazardous ingredients are recommended. If used under normal operating conditions, and with adequate ventilation, respiratory equipment is not required.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odour: Clear, colorless liquid with solvent odour.	**Boiling Point/Range:** 133 – 285° F
Odour Threshold: Not Available	**Vapour Density:** Not Available
Specific Gravity (Water = 1.00): 0.82	**VOC Composite Vapour Pressure:** 8.20 mmHg @ 20° C
Viscosity: Not Established	**Solubility in Water:** Negligible
pH: Not Applicable	**VOC (lbs/gal):** 5.25 (USEPA Method 24)
Freezing Point: Not Available	**Coefficient of Water/Oil Distribution:** Not Available

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Polymerization: Will NOT occur; product is stable.

Hazardous Decomposition Products: Includes, but not limited to smoke, fumes, oxides of nitrogen, oxides of carbon.

Materials and Conditions to Avoid: All potential sources of ignition. Avoid contact with strong oxidizers and strong acids/bases.

SECTION 11 – TOXICOLOGICAL INFORMATION

LD50 (oral, rat): No data available.

Acute Overexposure: May cause eye, skin, and respiratory tract irritation.

Chronic Overexposure: Prolonged or repeated skin contact may cause dermatitis and/or sensitization. Repeated ingestion may cause CNS depression and kidney damage. Chronic exposure to aliphatic petroleum distillates has been found to cause kidney damage in male rats. The mechanism by which this toxicity occurs is specific to the male rat and the kidney effects are not expected to occur in humans. Chronic overexposure to Isopropanol has been suggested as a cause of mild, reversible liver effects in laboratory animals.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Chemical Fate Data: No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Hazardous Waste Characterization: D001 (Ignitable Characteristic).

Recommendation: Dispose of materials associated with cleaning up spills and/or leaks according to federal, state and local regulations for ignitable waste. Consult appropriate federal, state and local regulations to determine proper characterization of used product contaminated with other printing process products.

SECTION 14 – TRANSPORT INFORMATION

Ground Shipping (US DOT 49 CFR): Flammable liquid, n.o.s. (Petroleum Distillate, Acetone) 3 UN1993 PG II (ERG#128).

Air (ICAO/IATA) Shipping: Not Available.

International Maritime Organization (IMDG) Shipping: Not Available.

SECTION 15 – REGULATORY INFORMATION

SARA Title III, Section 313 (Toxic Release Inventory) – None.

Clean Air Act 1990 Hazardous Air Contaminants; Clean Air Act HON Rule (Hazardous Air Pollutant-HAP) – None.

SARA Title III, Section 302 (Hazardous Substance List) – None.

Canadian DSL/NDSL Inventory: Components of this product are listed either on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification: Class B Flammable Material; Class D2B Toxic Material.

TSCA Inventory: All of this product's components are listed.

SECTION 16 – OTHER INFORMATION

FOR INDUSTRIAL USE ONLY USE ONLY AS DIRECTED DO NOT TAKE INTERNALLY

HAZARD RATING: Health – 1 Flammability – 3 Reactivity – 0 Personal Protection – Glasses, Gloves

Health: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe	Flammability: 0 = Will Not Burn 1 = Flash Point > 200° F 2 = Flash Point > 100° F and < 200° F 3 = Flash Point < 100° F and Boiling Point > 100° F 4 = Flash Point and Boiling Point <100° F	Reactivity: 0 = None 1 = Slight 2 = Moderate 3 = Serious 4 = Extreme

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. Some information may be based on indirect test data.

MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard (29 CFR 1910.1200) and the American National Standards Institute Standard for MSDSs (ANSI Z400.1)

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufactured For: **Baldwin Oxy-Dry Americas** Address: 14600 W. 106th Street Lenexa, KS 66215	Identity (trade name as used on label): **Baldwin 1705** **Impact Prepac Solution** **For Conventional Web and Sheet-Fed Presses**
Date Prepared: 11/11/09 Revision: 2 Prepared By: LMA	Date Reviewed: 11/28/2012 Reviewed By: JMM
Information Calls: (866) 443-5811	DOT Emergency Response: (800) 424-9300

SECTION 2 – HAZARDS IDENTIFICATION

Emergency Overview: Colourless liquid with mild solvent odor. May cause eye irritation; may cause minor skin irritation. If swallowed, aspiration into the lungs may cause severe damage or even death. During emergencies, wear equipment to protect eyes and skin. Dike or absorb spills to keep material and run-off from entering sewers, drains or waterways.

Potential Health Effects:
Skin – Splashes to the eyes may cause irritation.
Eyes – Prolonged or repeated contact may cause minor irritation.
Inhalation – None known.
Ingestion – May cause nausea, vomiting, diarrhea.

Conditions Aggravated by exposure: None known.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	WT. %	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
HYDROTREATED MIDDLE DISTILLATE (Mfr. Recommends 100 mg/m3 TWA)	64742-46-7	35-45	Not Established	Not Established	d

*See SECTION 15 – REGULATORY INFORMATION.

**Chemical Listed as Carcinogen or Potential Carcinogen: a = NTP b = IARC Monograph c = OSHA d = Not Listed e = Animal Data Only

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush with water for at least 15 minutes; seek medical attention if irritation persists.	**Ingestion:** Do NOT induce vomiting; this material can enter the lungs and cause severe lung damage. Seek immediate medical attention.
Skin Contact: Remove contaminated clothing; launder before re-use. Wash skin with soap and water; if irritated, seek medical attention.	**Inhalation:** Immediately remove to fresh air. Seek medical attention if breathing difficulty occurs.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point and Method Used:	**Auto Ignition Temperature:**	**Explosion Limits:**
>200° F (CC)	Not Established	% LEL – Not Established % UEL – Not Established

Extinguisher Media: Foam, dry chemical; use water spray to cool exposed surfaces.
OSHA Class IIIB Combustible Liquid. Evacuate area and fight fire from a safe distance if fire is contained in small area; otherwise, call the local fire department.

Unusual Fire & Explosion Hazards: Under fire conditions, hazardous fumes may be present. Fire media run-off can damage the environment. Dike and collect media used to fight fire.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

For small incidental spills and leaks, wear protective gloves and eye protection. Stop source of leak or spill. Isolate area of spill by diking, and/or add dry absorbent to prevent it from entering sewers, drains or waterways. Clean up and place in an appropriate container for disposal. Wash all contaminated clothing before reuse. For larger spill requiring emergency response, follow OSHA emergency response regulations and NIOSH recommendations. If possible, stop source of spill or release. Isolate the area of spill or release by diking to prevent it from entering sewers, drains or waterways. Clean up and place in an appropriate container for disposal.

SECTION 7 – HANDLING/STORAGE

Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Do not eat, drink or smoke in work areas. Keep container closed when not in use. Use only with adequate ventilation.
Store in a cool, dry, well-ventilated area away from all sources of ignition, including open flames, welding arcs, heat, and other sparks. Avoid storage with acids/bases and strong oxidizers.

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Ventilation: Good, general ventilation should be sufficient for most operations. Ten or more room air changes per hour containing a minimum of 15% fresh air are recommended.

Personal Protection: Safety glasses and gloves impervious to the hazardous ingredients are recommended. If used under normal operating conditions, and with adequate ventilation, respiratory equipment is not required.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colourless liquid with mild solvent odor.	**Boiling Point/Range:** 660° F
Odor Threshold: Not Available	**Vapor Density:** Not Available
Specific Gravity (Water = 1.00): 0.86 – 0.88	**VOC Composite Vapour Pressure:** <0.1 mmHg @ 20° C
Viscosity: Not Established	**Solubility in Water:** Emulsifies
pH: Not Applicable	**VOC (lbs/gal):** 0.4 (USEPA Method 24)
Freezing Point: Not Available	**Coefficient of Water/Oil Distribution:** Not Available

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Polymerization: Will NOT occur; product is stable.

Hazardous Decomposition Products: Includes, but not limited to smoke, fumes, carbon monoxide, carbon dioxide.

Materials and Conditions to Avoid: All potential sources of ignition. Avoid contact with strong oxidizers and strong acids/bases.

SECTION 11 – TOXICOLOGICAL INFORMATION

LD50 (oral, rat): No data available.

Acute Overexposure: May cause eye and minor skin irritation.

Chronic Overexposure: Effects of overexposure may include irritation of the respiratory tract, transient excitation followed by signs of nervous system depression.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Chemical Fate Data: No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Hazardous Waste Characterization: None

Recommendation: Dispose of materials associated with cleaning up spills and/or leaks according to federal, state and local regulations for ignitable waste. Consult appropriate federal, state and local regulations to determine proper characterization of used product contaminated with other printing process products.

SECTION 14 – TRANSPORT INFORMATION

Ground Shipping (US DOT 49 CFR): Not Regulated.

Air (ICAO/IATA) Shipping: Not Regulated.

International Maritime Organization (IMDG) Shipping: Not Regulated.

SECTION 15 – REGULATORY INFORMATION

SARA Title III, Section 313 (Toxic Release Inventory) – None

Clean Air Act 1990 Hazardous Air Contaminants; Clean Air Act HON Rule (Hazardous Air Pollutant-HAP) – None

SARA Title III, Section 302 (Hazardous Substance List) – None

Canadian DSL/NDSL Inventory: All components of this product are listed on the Domestic Substance List; no components are listed on the Non-Domestic Substance List (NDSL).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

TSCA Inventory: All of this product's components are listed.

SECTION 16 – OTHER INFORMATION

FOR INDUSTRIAL USE ONLY USE ONLY AS DIRECTED DO NOT TAKE INTERNALLY

HAZARD RATING: Health – 1 Flammability – 1 Reactivity – 0 Personal Protection – Glasses, Gloves

Health: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe	Flammability: 0 = Will Not Burn 1 = Flash Point > 200° F 2 = Flash Point > 100° F and < 200° F 3 = Flash Point < 100° F and Boiling Point > 100° F 4 = Flash Point and Boiling Point <100° F	Reactivity: 0 = None 1 = Slight 2 = Moderate 3 = Serious 4 = Extreme

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. Some information may be based on indirect test data.

FUJIFILM Canada Inc.
Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: Emerald Premium KDHP Acid Fountain Solution

Product Code: 203575 20357275 20357275 **Manufacturer Code:** ANCHOR 20357

Distributor

FUJIFILM Canada Inc.
600 Suffolk Court
Misssissauga, Ontario L5R 4G4

Manufacturer

FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-032

Emergency # : CANUTEC (613) 996-6666

HEALTH Emergency #: 800-424-9300

Prepared By: FUJIFILM Canada Inc.

Telephone: (905) 890-6611

Preparation Date: mm/dd/yy 6/30/09

Product Use: Graphic arts product

Section 2. Hazards Identification

Emergency Overview

In the event of an emergency, refer to the information contained within this document. Avoid contact with spilled materials. Wear recommended safety equipment when handling any chemical product. Dike or absorb spills to keep material and run-off from entering sewer or waterways. Consult all material safety data sheets.

Effects Of Acute Exposure:

Skin, eye, respiratory tract and mucous membrane irritant. Ingestion of product may cause nausea and vomiting. Prolonged or repeated inhalation may cause central nervous system depression, anemia and damage to the kidneys, liver and blood system.

Ingredient Information:

Chronic overexposure to 2-butoxyethanol in high concentrations has caused anemia, liver and blood abnormalities, and kidney and lung damage in laboratory animals. May cause maternal toxicity. The American Conference of Governmental Industrial Hygienists (ACGIH) has designated 2-butoxyethanol as an animal carcinogen (A3). Ethylene glycol has caused fetal malformations and fetotoxicity at doses producing no maternal toxicity. Allergic reaction to gum arabic may cause respiratory distress and sensitivity. Borax may impair fertility and cause harm to the unborn child.

Effects of Chronic Exposure:

Prolonged or repeated skin contact may cause dermatitis. May cause central nervous system effects.

WHMIS Class: D1-B, D2-A

HMIS rating:	Health	2	Flammability	1	Reactivity	0	Protection C
NFPA rating:	Health	2	Flammability	1	Reactivity	0	Specific Hazards None

Hazard Rating: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe C = Gloves, Goggles and Apron

Routes Of Entry: Skin contact, eye contact, inhalation, ingestion

Conditions Aggravated by Exposure: Not available

Section 3. Hazardous Ingredients

INGREDIENT	CAS NUMBER	WEIGHT %
Ammonium nitrate	6484-52-2	1-5
Borax, 5-mole	1303-96-4	1-5
Ethylene glycol	107-21-1	0.1-1
2-butoxyethanol	111-76-2	5-10
Gum arabic	9000-01-5	3-7
N-Octylpyrrolidinone	2687-94-7	1-5
Sodium gluconate	527-07-1	1-5
Sodium malate	3105-51-9	1-5
Sucrose	57-50-1	5-10

Section 4. First Aid Measures

Eyes Flush with cool water for 15 minutes. Obtain medical attention.

Skin Wash with soap and water for 15 minutes. Obtain medical attention.

Ingestion Never give anything by mouth to a person rapidly losing consciousness, unconscious or convulsing and should vomiting occur naturally, lean victim forward to reduce the risk of aspiration. Obtain prompt medical attention.

Inhalation Remove to fresh air. Obtain medical attention.

Section 5. Fire Fighting Measures

Flammability:	No	**If Yes, Under Which Conditions?**	Not applicable
Flashpoint and Method (° C):	>93	**Autoignition Temperature:**	Not applicable
Upper Flammable Limit (% By Volume):	Not applicable	**Lower Flammable Limit (% By Volume):**	Not applicable
Explosion Data			
Sensitivity To Impact:	Not applicable	**Sensitivity To Static Discharge:**	Not applicable

Means of Extinction:

Use water spray, foam, CO_2 or dry chemical fire fighting apparatus.

Unsuitable Extinguishing Media:

Not available

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to the fire. Dike and collect media used to fight fire.

Hazardous Combustion Products:

See decomposition products

Section 6. Accidental Release Measures

Leak and spill procedure: Ventilate area. Wear appropriate personal protective equipment. Stop source of material release. Keep unwanted personnel away from spill zone. Prevent spills from spreading using an inert material as a dam. Do not flush area with water. Absorb spilled product with inert material. If required contact local or provincial agencies. Wash contaminated clothing before reuse and discard contaminated leather shoes. Product soaked absorbent should be placed in a sealed container for disposal in accordance to local, provincial or federal regulations.

Section 7. Handling and Storage

Handling:

Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapours. Do not swallow. Handle in areas with adequate ventilation. Wear appropriate personal protective equipment during handling. Wash thoroughly after handling. Keep containers closed when not in use.

Storage:

Store in a cool, dry, well ventilated place. Keep containers closed when not in use.

Section 8. Exposure Controls and Personal Protection

Engineering Controls: Local mechanical exhaust ventilation recommended.

Protective Equipment

Eyes: Chemical resistant safety goggles

Respirator: If TLV is exceeded use a respirator with appropriate cartridges

Skin Protection: Neoprene gloves and apron

Other: Eyewash station

Exposure Limits - check with provincial authority for applicability

	ACGIH TWA	ACGIH STEL	ACGIH CEL
Ammonium nitrate	not established	not established	not established
Borax, 5-mole	2mg/m^3 (inh.PM)	not established	6mg/m^3 (inh.PM)
Ethylene glycol	not established	not established	100 mg/m^3
2-butoxyethanol	20 ppm	not established	not established
Gum arabic	not established	not established	not established
N-Octylpyrrolidinone	not established	not established	not established
Sodium gluconate	not established	not established	not established
Sodium malate	not established	not established	not established
Sucrose	10 mg/m^3	not established	not established

Section 9. Physical and Chemical Properties

Physical State:	Liquid, green, clear	**pH :**	4.85
Odour:	Mild	**Specific Gravity:**	1.105
Odour Threshold:	Not available	**Solubility in Water**	Complete
Vapour Density:	Not available	**Volatiles**	Not available
Vapour Pressure (mm Hg):	~17 @20C	**Coefficient of Water Oil Distribution**	Not available
Evaporation Rate:	Not available	**VOC lb/gal**	0.8
Boiling Point (°C) :	> 100	**Freezing Point (°C):**	Not available
Melting Point (°C):	Not available		

Section 10. Stability and Reactivity

Hazardous Polymerization: Hazardous polymerization will not occur if product is used and stored as directed.

Materials and Conditions to Avoid: Strong oxidizers, strong acids, strong bases, chlorine bleaches. Keep away from excess heat.

Reactivity and Conditions:

Addition of bleaches (sodium hypochlorite) can result in the release of hazardous gases causing severe respiratory irritation.

Decomposition Products: CO_2, CO, NOx, SOx, ammonia

Conditions of Chemical Instability: Product is stable if used and stored as directed

Section 11. Toxicological Information

LD50 (oral rat): Not available **Synergistic Materials:** None known

Irritancy : Skin, eye, respiratory tract and mucous membrane irritant

Sensitization : May cause sensitivity to respiratory tract

Teratogenicity: Ethylene glycol caused embryotoxic and teratogenic effects in laboratory animals

Carcinogenicity: ACGIH has designated 2-butoxyethanol as an animal carcinogen (A3).

Reproductive Toxicity: Not known to be a reproductive toxin

Mutagenicity: Not known to be a mutagen

Ingredients	LD50 (Oral Rat)	LC50 (Species)	LD50 (species)
Ammonium nitrate	2217 mg/kg	not available	
Borax, 5-mole	2660 mg/kg	not available	
Ethylene glycol	2.8 g/kg (cut)	>200mg/m^3/4H (rat)	
2-butoxyethanol	470 mg/kg	450ppm/4hr(rat)	
Gum arabic	>16g/kg	not available	
N-Octylpyrrolidinone	2050 mg/kg	not available	
Sodium gluconate	7.63 g/kg (LDLo)	not available	
Sodium malate	not available	not available	
Sucrose	29.7 g/kg	not available	

Section 12. Ecological Information

Ecotoxicity Data: Not available **Chemical fate Data:** Not available

Section 13. Disposal Considerations

Consult appropriate municipal, provincial and federal regulatory agencies to determine proper disposal procedures.

Section 14. Transportation Information

Proper Shipping Name: Not regulated

Shipping Class: Not applicable

Product Identification No: Not applicable

Packing Group: Not applicable **Other Instructions:** Check transportation labels

Section 15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation (CPR) and the MSDS contains all of the information required by the CPR.

Section 16. Other Information

This MSDS has been prepared to meet WHMIS requirements and is believed to be correct. The information should be used to make an independent determination of the methods to safeguard workers and the environment.

FUJIFILM Canada Inc.
Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: **Emerald MXEH-M One-Step Fountain Solution**

Product Code: 201855 **Manufacturer Code:** ANCHOR 2018

Distributor

FUJIFILM Canada Inc.
600 Suffolk Court
Misssissauga, Ontario L5R 4G4

Manufacturer

FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-032

Emergency # : CANUTEC (613) 996-6666

HEALTH Emergency #: 800-424-9300

Prepared By: FUJIFILM Canada Inc.

Telephone: (905) 890-6611

Preparation Date: mm/dd/yy 5/5/10

Product Use: Graphic arts product

Section 2. Hazards Identification

Emergency Overview

In the event of an emergency, refer to the information contained within this document. Avoid contact with spilled materials. Wear recommended safety equipment when handling any chemical product. Dike or absorb spills to keep material and run-off from entering sewer or waterways. Consult all material safety data sheets.

Effects Of Acute Exposure:

Irritant to skin, eyes, mucous membranes and respiratory tract. Ingestion of product may cause nausea and vomiting.

Ingredient Information:

Allergic reaction to gum arabic dust may cause respiratory distress and sensitivity. Ethylene glycol has caused fetal malformations and fetotoxicity at doses producing no maternal toxicity.

Effects of Chronic Exposure:

Prolonged or repeated skin contact may cause allergic reaction and dermatitis.

WHMIS Class: D2-A

HMIS rating:	Health	2	Flammability	1	Reactivity	0	Protection C
NFPA rating:	Health	2	Flammability	1	Reactivity	0	Specific Hazards None

Hazard Rating: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe C = Gloves, Goggles and Apron

Routes Of Entry: Skin contact, eye contact, inhalation, ingestion

Conditions Aggravated by Exposure: Not available

Section 3. Hazardous Ingredients

INGREDIENT	CAS NUMBER	WEIGHT %
Acetic acid	64-19-7	1-5
Ammonium nitrate	6484-52-2	1-5
Diethylene glycol monobutyl ether	112-34-5	5-10
Gum arabic	9000-01-5	1-5
N-Octylpyrrolidinone	2687-94-7	1-5
Propylene glycol	57-55-6	7-13
Ethylene glycol	107-21-1	0-1

Section 4. First Aid Measures

Eyes Flush with cool water for 15 minutes. Obtain medical attention.

Skin Remove contaminated clothing, shoes and leather goods under running water. Wash with soap and water for 15 minutes. Obtain medical attention.

Ingestion Induce vomiting upon medical advice. Never give anything by mouth to a person rapidly losing consciousness, unconscious or convulsing and should vomiting occur naturally, lean victim forward to reduce the risk of aspiration. Obtain prompt medical attention.

Inhalation Remove to fresh air. Obtain medical attention.

Section 5. Fire Fighting Measures

Flammability:	No	**If Yes, Under Which Conditions?**	Not applicable
Flashpoint and Method (° C):	>94	**Autoignition Temperature:**	Not applicable
Upper Flammable Limit (% By Volume):	Not applicable	**Lower Flammable Limit (% By Volume):**	Not applicable
Explosion Data			
Sensitivity To Impact:	Not applicable	**Sensitivity To Static Discharge:**	Not applicable

Means of Extinction:

Use water spray, foam, CO_2 or dry chemical fire fighting apparatus.

Unsuitable Extinguishing Media:

Not available

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to the fire. Dike and collect media used to fight fire.

Hazardous Combustion Products:

See decomposition products

Section 6. Accidental Release Measures

Leak and spill procedure: Ventilate area. Wear appropriate personal protective equipment. Stop source of material release. Keep unwanted personnel away from spill zone. Prevent spills from spreading using an inert material as a dam. Do not flush area with water. Absorb spilled product with inert material. If required contact local or provincial agencies. Wash contaminated clothing before reuse and discard contaminated leather shoes. Product soaked absorbent should be placed in a sealed container for disposal in accordance to local, provincial or federal regulations.

Section 7. Handling and Storage

Handling:

Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapours. Do not swallow. Handle in areas with adequate ventilation. Wear appropriate personal protective equipment during handling. Wash thoroughly after handling. Keep containers closed when not in use.

Storage:

Store in a cool, dry, well ventilated place. Keep container closed when not in use.

Section 8. Exposure Controls and Personal Protection

Engineering Controls: Local mechanical exhaust ventilation recommended.

Protective Equipment

Eyes: Chemical resistant safety goggles

Respirator: If TLV is exceeded use a respirator with appropriate cartridges

Skin Protection: Neoprene gloves and apron

Other: Eyewash station

Exposure Limits - check with provincial authority for applicability

	ACGIH TWA	ACGIH STEL	ACGIH CEL
Acetic acid	10 ppm	15 ppm	not established
Ammonium nitrate	not established	not established	not established
Diethylene glycol monobutyl ether	not established	not established	not established
Gum arabic	not established	not established	not established
N-Octylpyrrolidinone	not established	not established	not established
Propylene glycol	not established	not established	not established
Ethylene glycol	not established	not established	100 mg/m^3

Section 9. Physical and Chemical Properties

Physical State:	Liquid, green, clear	**pH :**	4.0
Odour:	Mild	**Specific Gravity:**	1.04
Odour Threshold:	Not available	**Solubility in Water**	100%
Vapour Density:	Not available	**Volatiles**	Not available
Vapour Pressure (mm Hg):	~17 @20C	**Coefficient of Water Oil Distribution**	Not available
Evaporation Rate:	Not available	**VOC lb/gal**	1.96
Boiling Point (°C) :	>100	**Freezing Point (°C):**	Not available
Melting Point (°C):	Not available		

Section 10. Stability and Reactivity

Hazardous Polymerization: Hazardous polymerization will not occur if product is used and stored as directed.

Materials and Conditions to Avoid: Strong oxidizers, strong acids, strong bases, chlorine bleaches. Keep away from excess heat.

Reactivity and Conditions:

Addition of bleaches (sodium hypochlorite) can result in the release of hazardous gases causing severe respiratory irritation.

Decomposition Products: CO_2, CO, SOx, NOx, ammonia

Conditions of Chemical Instability: Product is stable if used and stored as directed

Section 11. Toxicological Information

LD50 (oral rat): >5000 mg/kg **Synergistic Materials:** None known

Irritancy : Skin, eye, mucous membrane and respiratory tract irritant

Sensitization : May cause sensitivity to respiratory tract

Teratogenicity: Ethylene glycol caused embryotoxic and teratogenic effects in laboratory animals

Carcinogenicity: Not known to be carcinogenic

Reproductive Toxicity: Not known to be a reproductive toxin

Mutagenicity: Not known to be a mutagen

Ingredients	LD50 (Oral Rat)	LC50 (Species)	LD50 (species)
Acetic acid	3310 mg/kg	16000 ppm/4H	
Ammonium nitrate	2217 mg/kg	not available	
Diethylene glycol monobutyl ether	5.6 g/kg	not available	
Gum arabic	>16g/kg	not available	
N-Octylpyrrolidinone	2050 mg/kg	not available	
Propylene glycol	20 g/kg	not available	
Ethylene glycol	2.8 g/kg (cut)	>200mg/m^3/4H (rat)	

Section 12. Ecological Information

Ecotoxicity Data: Not available **Chemical fate Data:** Not available

Section 13. Disposal Considerations

Consult appropriate municipal, provincial and federal regulatory agencies to determine proper disposal procedures.

Section 14. Transportation Information

Proper Shipping Name: Not regulated

Shipping Class: Not applicable

Product Identification No: Not applicable

Packing Group: Not applicable **Other Instructions:** Check Transportation Labels

Section 15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation (CPR) and the MSDS contains all of the information required by the CPR.

Section 16. Other Information

This MSDS has been prepared to meet WHMIS requirements and is believed to be correct. The information should be used to make an independent determination of the methods to safeguard workers and the environment.

No.: 1003

*** FICHE SIGNALETIQUE ***

PREPAREE PAR: A.KASIMIR DATE: 01/01/11

INDUSTRIES GRAPHOBEC LTEE
111.Indust,Delson,QUE,J0L-1G0
CANADA (450) 632-2610

*** TELEPHONE D'URGENCE ***

(450)632-2610/632-4730;CANUTEC: (613) 996-6666

SECTION -I- IDENTIFICATION DU PRODUIT

Nom du produit: PRESTIGE 884 REJUVENATOR
Nom general...: REJUVENATEUR DE BLANCHET
Utilisation...: USAGE INDUSTRIEL SEULEMENT
Classif.SIMDUT: CLASS.B-2 CLASS.D-2B
Classif.T.M.D.: LIQUIDE INFLAMMABLE

SECTION -II- INGREDIENTS HASARDEUX

-X-	COMPOSANTS	T.L.V	No.CAS
10 - 30	NAPHTE DE PETROLE.....	300 PPM	8032-32-4
10 - 30	2-ETHOXYETHANOL.....	5 PPM	110-80-5
10 - 30	ACETATE D'ETHYL	400 PPM	141-78-6
30 - 60	NAPHTE.....	400 PPM	64742-89-8
1 - 10	CETONE.....	750 PPM	67-64-1

SECTION -III- DONNEES PHYSIQUES

Etat Physique.....: Liquide clair
Seuil de l'odeur.....: Odeur de solvant
Point d'ebulition....oC.: 93.oC Ingredient (4)
Tension de vapeur(mm/Hg): 105 a 38.oC ingrd.(4)
Densite de vapeur(Air=1): Plus lourd que l'air
Taux d'evap.(B/Acet=1)..: Plus lent que l'ether
% Volatile par volume...: 100%
Point de fusion.....oC.: Non etabli
Point de congelation.oC.: Non etabli
Solubilite dans l'eau...: Non etabli
Densite(Eau=1).....: 0.78 a 20.oC
PH.....: Non etabli

SECTION -IV- RISQUES D'INCENDIE ET D'EXPLOSION

Point d'Eclair (Vase clos): - 15.oC
(Vase ouvert):

*****MOYENS D'EXTINCTION*****

(X)Mousse (X)Dioxide de Carbone (X)Poudre Chim.
(X)Eau Pulverisee ( ) Autre:

*****PROCEDURES POUR COMBATTRE LE FEU*****

(X)Porter une tenue de protection et appareil respiratoire autonome avec masque integral
(X)Pulveriser de l'eau sous forme de brouillard pour refroidir tous contenants de metal et structures exposes.

DANGERS EXCEPTIONNELS DE FEU & D'EXPLOSION

(X)Les vapeurs sont plus lourdes que l'air, et peuvent se propager en cas de fuite jusqu'a

*** MATERIAL SAFETY DATA SHEET ***

PREPARED BY: A.KASIMIR DATE: 01/01/11

GRAPHOBEC INDUSTRIES LTD
111.Indust,Delson,QUE,J0L-1G0
CANADA (450) 632-2610

*** EMERGENCY TELEPHONE ***

(450)632-2610/632-4730;CANUTEC: (613) 996-6666

SECTION -I- PRODUCT IDENTIFICATION

Product name: PRESTIGE 884 REJUVENATOR
General name: RUBBER REJUVENATOR
Material Use: INDUSTRIAL USE ONLY
WHMIS.Class.: CLASS.B-2 CLASS.D-2B
T.D.G.Class.: FLAMMABLE LIQUID

SECTION -II- HAZARDOUS INGREDIENTS

-X-	COMPONENTS	T.L.V	CAS.No
10 - 30	PETROLEUM NAPHTA.....	300 PPM	8032-32-4
10 - 30	2-ETHOXYETHANOL.....	5 PPM	110-80-5
10 - 30	ETHYL ACETATE.....	400 PPM	141-78-6
30 - 60	NAPHTA.....	400 PPM	64742-89-8
1 - 10	KETONE.....	750 PPM	67-64-1

SECTION -III- PHYSICAL DATA

Physical state.....: Clear liquid
Odour treshold.....: Solvent odor
Boiling point.....oC.: 93.oC Ingredient (4)
Vapour pressure(mm/Hg): 105 @ 38.oC ingrd.(4)
Vapour density(Air=1).: Heavier than air
Evap/rate(B/Acet=1)...: Slower than ether
% Volatile by volume..: 100%
Melting point.....oC.: Not established
Freezing point.....oC.: Not established
Solubility in water...: Not established
Sp/Gravity(water=1)...: 0.78 @ 20.oC
PH.....: Not established

SECTION -IV- FIRE AND EXPLOSION HAZARD DATA

Flash Point (Closed cup): - 15.oC
(Open cup):

*****EXTINGUISHING MEDIA*****

(X)Foam (X)Carbone Dioxide (X)Dry Chemical
(X)Water Fog ( ) Others:

*****FIREFIGHTING MEDIA*****

(X)Wear protective clothing and self-contained breathing apparatus with a full facepiece
(X)Spray water fog, to cool all exposed metal containers and structures.

UNUSUAL FIRE AND EXPLOSION HAZARDS

(X)Vapors are heavier than air, and in case of a leak, they may travel to distant source

(SUITE)

une source d'inflammation sensiblement loin, (feu, flammes, etincelles, decharges statiques, moteurs electriques, radiateurs, etc.)
(X)Attacher les contenants a la Masse(Ground), avant de transferer le (Contenu liquide)
(X)Tenir dans un endroit adequatement aerer
(X)Bien fermer le contenant apres usage

****PRODUITS DE DECOMPOSITION HASARDEUX****

(X)Peut former du materiel toxique:
(X)Dioxide de Carbone (X)Monoxide de Carbone
(X)D'autres Hydrocarbones, etc.

SECTION -V- REACTIVITE

STABILITE: (X)-Stable ( )-Instable

*****CONDITIONS A EVITER*****

(X)-Toutes sources d'inflammation:
(Feu-Flammes nues-Etincelles, Etc.)

****INCOMPATIBILITE****

(X)-Agents Comburants Forts (X)-Alcalis Forts
(X)-Acides mineraux concentres

*****POLYMERISATION HASARDEUSE*****

( )-Peut se produire (X)-Ne se produira pas

*****CONDITION A EVITER*****

(X)-Toutes sources d'inflammation et chaleur

SECTION -VI- RISQUE POUR LA SANTE

Limites d'exposition(T.L.V): Voir Section-II

**** PRECAUTIONS ET CONSEIL SECURITAIRE ****

Porter de l'equipement protectif adequait, lorsqu'on manipule n'importe quel Solvant Petrolier, Alcool, Solution, Prod. Chimique etc. Eviter le contact avec les yeux et la peau, l'inhalation excessive des vapeurs ainsi que l'ingestion du produit. (Nocif si avale).

*** EFFETS EN CAS DE SUREXPOSITION ***

YEUX: Peut causer irritation, rougeur, larmes.
PEAU: Un contact prolonge peut causer des irritations, assechement de la peau ou entrainer une dermatite.
INGESTION: Nocif, si avale, peut provoquer de l'irritation gastro-intestinale, nausees, vomissements et diarrhee.
INHALATION: L'inhalation excessive de vapeur peut provoquer l'irritation des yeux, du nez, la gorge et les voies respiratoires. Peut produire une depression du Systeme Nerveux Central (SNC), nausees, vertige, faiblesse et maux de tete.

******* PREMIERS SOINS *******

YEUX: Laver immediatement a l'eau courante pendant au moins 15 minutes, consulter le Medecin immediatement.
PEAU: Laver a fond la region exposee a l'eau et savon, retirer tous les vetements contamines, et en cas d'irritations, Consulter le Medecin Immediatement.

(CONTINUATION)

of ignition,
(fire, flames, sparks, static discharges, electric motor, radiators, etc.)
(X)Containers should be (Grounded), before transferring (Liquid content)
(X)Keep in an adequately ventilated area
(X)Keep containers closed when not in use

****HAZARDOUS DECOMPOSITION PRODUCT****

(X)May form toxic material:
(X)Carbone Dioxide (X)Carbone Monoxide
(X)Various Hydrocarbones, etc.

SECTION -V- REACTIVITY DATA

STABILITY: (X)-Stable ( )-Unstable

*****CONDITIONS TO AVOID*****

(X)-All Ignition sources:
(Fire-Open flames-Sparks, Etc.)

****INCOMPATIBILITY****

(X)-Strong Oxidizing Agents (X)-Strong Alkalie
(X)-Strong Mineral Acids

*****HAZARDOUS POLYMERIZATION*****

( )-May occur (X)-Will not occur

*****CONDITIONS TO AVOID*****

(X)-All Ignition and heat sources.

SECTION -VI- HEALTH & HAZARD DATA

Threshold limit value(T.L.V): See Section-II

**** PRECAUTIONS AND SECURITY ADVICE ****

Wear adequate protective equipment when handling any type of Petroleum Solvent, Alcohol, Solution, Chemical Products etc. Avoid contact with eyes and skin, excessive inhalation of vapors and also the ingestion of the product. (Harmful if swallowed).

*** EFFECTS IN CASE OF OVEREXPOSURE ***

EYES: Can cause irritation, redness, tearing.
SKIN: Prolonged contact can cause irritation drying of the skin and may cause also dermatitis.
INGESTION: Harmful, if swallowed, can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
INHALATION: Excessive inhalation of vapors can cause Eye, Nose, Throat and respiratory irritations.
May cause a depression to the Central Nervous System (CNS), nausea, dizziness, weakness and headache.

******* FIRST AID *******

EYES: Immediately flush with running water for at least 15 minutes, get medical attention immediately.
SKIN: Thoroughly wash exposed area with soap and water, remove all contaminated clothing, and in case of irritations, Get Medical Attention Immediately.

(SUITE)	(CONTINUATION)
INGESTION: si la victime est consciente, lui faire boire 1 a 2 verres d'eau afin de diluer le produit avale. Ne pas provoquer le vomissement. En cas de vomissement spontane, pencher la victime vers l'avant la tete vers le bas pour eviter l'aspiration des vomissures. Consulter le Medecin Immediatement.	INGESTION: If the victim is conscious, give 1 to 2 glasses of water to drink in order to dilute the swallowed product. Do not induce vomiting. In case of spontaneous vomiting, have the victim lean foreward with head down to avoid breathing in of vomitus. Get Medical Attention Immediately.
INHALATION: Faire respirer de l'air frais a l'individu incommode, si la respiration se fait difficile, administrer de l'oxigene. Consulter le Medecin Immediatement.	INHALATION: If affected, remove individual to fesh air, if breathing is difficult, administer oxigen. Get Medical Attention Immediately.
SECTION -VII- PROCEDURES:FUITES OU DEVERSEMENTS	**SECTION -VII- SPILL OR LEAK PROCEDURES**
Se conformer aux reglements Gouvernementaux applicables aux rapports sur le Deversement, la Manutention et l'elimination des Dechets.	To comply with all applicable Governmental regulations on Spill reporting and Handling, and Waste elimination.
*** EN CAS DE FUITE OU DEVERSEMENT MINEUR ***	*** IN CASE OF MINOR LEAK OR SPILL ***
DEVERSEMENT MINEUR: Utiliser du chiffon tout usage, papier absorbant ou autres substances absorbantes pour essuyer le deversement. Disposer seulement dans des contenants a dechets approuves par le Dept.du Transport.	MINOR SPILL: Use an all purpose cloths, absorbent paper or other absorbent substance to wipe the spill. Dispose only in Dept.of Transport approuved waste containers.
*** EN CAS DE FUITE OU DEVERSEMENT MAJEUR ***	*** IN CASE OF MAJOR LEAK OR SPILL ***
DEVERSEMENT MAJEUR: Eliminer toutes sources d'inflammation (Feu, Flammes, etincelles etc.) Porter tenue et equipement protectif complet Arreter ou reduire le deversement seulement si c'est securitaire et endiguer avec de la terre ou du sable pour empecher de s'etendre Pomper le produit deverse dans d'autres contenants de recuperation et pour d'autres residus, utiliser des substances absorbantes	MAJOR SPILL: Eliminate all ignition sources (Fire, Flames, Sparks etc.) Wear complete protective clothing and equipment Stop or reduce spill source, only if safe to do so and dike area of spill with sand or soil to prevent spreading. Pump the spilled product into other containers for recuperation and for other remaining residue, use absorbent substance.
*** METHODE D'ELIMINATION DES DECHETS ***	*** WASTE DISPOSAL METHOD ***
Disposer des produits contamines ainsi que des matieres utilisees pour le nettoyage du deversement, selon les reglements applicables	Dispose of contaminated products and all materials used for spill cleaning, according to applicable regulations.
SECTION -VIII- EQUIPEMENT DE PROTECTION	**SECTION -VIII- PROTECTIVE EQUIPMENT**
**** PROTECTION DES YEUX ****	**** EYE PROTECTION ****
Des lunettes de protection approuvees contre les eclaboussures de produits chimiques sont recommandees (Verifier avec vos fournisseurs)	Chemical splash goggles in compliance with OSHA regulations are recommended (Consult your safety equipment supplier)
**** PROTECTION DE LA PEAU ****	**** SKIN PROTECTION ****
Des gants de caoutchouc resistants sont recommandes (Consulter vos fournisseurs en equipement de protection)	Resistant rubber gloves are recommended, (consult your safety equipment supplier)
	* * * * * * * *
**** PROTECTION RESPIRATOIRE ****	**** RESPIRATORY PROTECTION ****
Respiratoire antipoussieres avec cartouche contre les vapeurs des produits, pour les con centrations jusqu'a 1000ppm est recommande.	An air-purifying respirator equipped with vapour cartridge for concentations up to 1000ppm is recommended.
**** VENTILATION ****	**** VENTILATION ****
L'installation de ventilateurs d'evacuation locaux est recommandee.	Local exhaust ventilation is recommended.
	* * * * * * *
**** AUTRE EQUIPEMENT PROTECTEUR ****	**** OTHER PROTECTIVE EQUIPMENT ****
Tablier et bottes etanches, douche d'urgence	Impervious apron and boots, safety shower

(SUITE)

et fontaine oculaire bien proche du lieu d'exposition aux produits chimiques.

SECTION -IX- DONNEES TOXICOLOGIQUES & AUTRES

NAPHTE DE PETROLE.....DL/50: (ORL-RAT) NON ETABLI
DL/50: (INH-RAT) 3400 PPM/4H
2-ETHOXYETHANOL.....DL/50: (ORL-RAT) 3000 MG/KG
CL/50: (INH-SOURIS) 1820 PPM/7H
ACETATE D'ETHYL .....DL/50: (ORL-RAT) 5600 MG/KG
CL/50: (INH-RAT) 8000 PPM/4H
NAPHTE.....DL/50: (ORL-RAT) NON ETABLI
CL/50: (INH-RAT) NON ETABLI
CETONE.....DL/50: (ORL-RAT) 9750 MG/KG
CL/50: (INH-RAT) 16000 PPM/4 H.

*** ATTENTION ***

Les contenants vides peuvent retenir encore du produit ou des vapeurs du produit. Observer toutes les mesures securitaires.

*** AVIS ***

Les renseignements contenus dans ce document sont fournis de bonne foi par GRAPHOBEC LTEE et ne sont donnes qu'a titre de guide sur la manutention du produit. Ces renseignements ne sauraient etre consideres comme complets, les methodes et les conditions d'emploi et de manutention pouvant s'etendre a d'autres aspects. Aucune garantie, quelle qu'elle soit, expresse ou tacite, n'est accordee et que GRAPHOBEC LTEE ne peut en aucun cas etre tenu responsable de dommages, pertes, blessures corporelles ou dommages fortuits pouvant resulter de l'utilisation des renseignements contenus dans ce document.

FIN

(CONTINUATION)

and eye bath located close to chemical products exposure area.

SECTION -IX- TOXICOLIGICAL DATA & OTHERS

PETROLEUM NAPHTA.....LD/50: (ORL-RAT) NOT ESTABLISHED
LC/50: (INH-RAT) 3400 PPM/4H
2-ETHOXYETHANOL.....LD/50: (ORL-RAT) 3000 MG/KG
LC/50: (INH-MOUSE) 1820 PPM/7H
ETHYL ACETATE.....LD/50: (ORL-RAT) 5600 MG/KG
LC/50: (INH-RAT) 8000 PPM/4H
NAPHTA.....LD/50: (ORL-RAT) NOT ESTABLISHED
LC/50: (INH-RAT) NOT ESTABLISHED
KETONE.....LD/50: (ORL-RAT) 9750 MG/KG
LC/50: (INH-RAT) 16000 PPM/4 H.

*** ATTENTION ***

Emptied containers may still retain vapors or product residues.
Observe all safety measures.

*** NOTICE ***

The information contained in this document has been prepared in good faith by GRAPHOBEC LTD and is offered only as a guide to the handling of this product. It is not intended to be all-inclusive, the manner & conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and GRAPHOBEC LTD will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained in this document.

* * * * * *
* * * * * *

END

SunChemical
a member of the DIC group

Material Safety Data Sheet

1 . Product and company identification

Product code : 3000112

Product name : 200-383 N C 400 FLASH OIL

Material uses : Printing. Colorant.

Manufacturer/ Distributor : Sun Chemical Limited
10 West Drive
Brampton, Ontario
L6T 4Y4

In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)

Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500

Other information : (513) 830-8500

Date of revision : 1/26/2011.

2 . Hazards identification

Physical state : Liquid.

:

WHMIS (Classification) : **Not controlled under WHMIS (Canada).**

Emergency overview : No known significant effects or critical hazards.

Routes of entry Dermal contact. Inhalation.

Potential acute health effects

Eyes : May cause mild eye irritation.

Skin : May cause mild skin irritation.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects(Long term exposure)

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

See toxicological information (Section 11)

3 . Composition/information on ingredients

No hazardous ingredient

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : No specific data.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Special remarks on fire hazards : Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside. (Soybean oil)

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Not available.

Taste : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Boiling/condensation point : Lowest known value: 288°C (550°F)

Melting/freezing point : Not available.

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

VOC : 0%

Auto-ignition temperature : Lowest known value: 444.85°C (832.7°F) (Soybean oil).

Flammable limits : Not available.

Vapor pressure : Not available.

9 . Physical and chemical properties

Density : 0.923 g/cm³ (7.7 lbs/gal)

Solubility : Not available.

Viscosity : Not available.

Vapor density : Highest known value: >1 (Air = 1) (Soybean oil).

Evaporation rate : <1 (Soybean oil) compared with butyl acetate

Molecular weight : Not applicable.

Molecular formula : Not applicable.

Critical temperature : Not available.

Ionicity (in water) : Not available.

Dispersibility properties : Not available.

Physical/chemical properties comments : Not available.

10 . Stability and reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Reactivity - Light : Not applicable.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Partition coefficient: n-octanol/water : Not available.

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

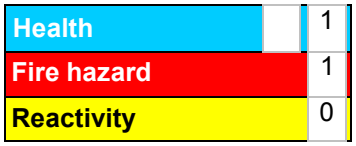
WHMIS (Classification) : Not controlled under WHMIS (Canada).

CANADA INVENTORY (DSL) : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

Hazardous Material Information System (U.S.A.) :



References : Not available.

Other special considerations : Not available.

Version : **1**

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

200-383

FUJIFILM Canada Inc.
Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: Silicone Emulsion DVQ

Product Code: 784155 7841275 **Manufacturer Code:** ANCHOR 7841

Distributor

FUJIFILM Canada Inc.
600 Suffolk Court
Misssissauga, Ontario L5R 4G4

Manufacturer

FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-032

Emergency # : CANUTEC (613) 996-6666

HEALTH Emergency #: 800-424-9300

Prepared By: FUJIFILM Canada Inc.

Telephone: (905) 890-6611

Preparation Date: mm/dd/yy 6/29/09

Product Use: Graphic arts product

Section 2. Hazards Identification

Emergency Overview

In the event of an emergency, refer to the information contained within this document. Avoid contact with spilled materials. Wear recommended safety equipment when handling any chemical product. Dike or absorb spills to keep material and run-off from entering sewer or waterways. Consult all material safety data sheets.

Effects Of Acute Exposure:

Irritant to eyes, skin, mucous membranes and respiratory tract. Ingestion of product may cause nausea and vomiting.

Ingredient Information:

None known

Effects of Chronic Exposure:

Prolonged or repeated skin contact may cause allergic skin reaction and dermatitis.

WHMIS Class: D2-B

HMIS rating:	Health	2	Flammability	1	Reactivity	0	Protection	C
NFPA rating:	Health	2	Flammability	1	Reactivity	0	Specific Hazards	None

Hazard Rating: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe C = Gloves, Goggles and Apron

Routes Of Entry: Skin contact, eye contact, inhalation, ingestion

Conditions Aggravated by Exposure: Not available

Section 3. Hazardous Ingredients

INGREDIENT	CAS NUMBER	WEIGHT %
Polyethylene glycol	25322-68-3	3-7
Glycols, polyethylene mono(trimethylnonyl)	60828-78-6	0.5-1.5
Polydimethylsiloxane	63148-62-9	30-40
Ditallow polyethoxyamido ammonium methylsulfate	68410-69-5	1-5

Section 4. First Aid Measures

Eyes Flush with cool water for 15 minutes. Obtain medical attention.

Skin Wash with soap and water for 15 minutes. Obtain medical attention.

Ingestion Induce vomiting on medical advice. Never give anything by mouth to a person rapidly losing consciousness, unconscious or convulsing and should vomiting occur naturally, lean victim forward to reduce the risk of aspiration. Obtain prompt medical attention.

Inhalation Remove to fresh air. Obtain medical attention.

Section 5. Fire Fighting Measures

Flammability:	No	**If Yes, Under Which Conditions?**	Not applicable
Flashpoint and Method (° C):	>93	**Autoignition Temperature:**	Not applicable
Upper Flammable Limit (% By Volume):	Not applicable	**Lower Flammable Limit (% By Volume):**	Not applicable
Explosion Data			
Sensitivity To Impact:	Not applicable	**Sensitivity To Static Discharge:**	Not applicable

Means of Extinction:

Use water spray, foam, CO_2 or dry chemical fire fighting apparatus.

Unsuitable Extinguishing Media:

Not available

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to the fire. Dike and collect media used to fight fire.

Hazardous Combustion Products:

See decomposition products

Section 6. Accidental Release Measures

Leak and spill procedure: Ventilate area. Wear appropriate personal protective equipment. Stop source of material release. Keep unwanted personnel away from spill zone. Prevent spills from spreading using an inert material as a dam. Do not flush area with water. Absorb spilled product with inert material. If required contact local or provincial agencies. Wash contaminated clothing before reuse and discard contaminated leather shoes. Product soaked absorbent should be placed in a sealed container for disposal in accordance to local, provincial or federal regulations.

Section 7. Handling and Storage

Handling:

Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapours. Do not swallow. Handle in areas with adequate ventilation. Wear appropriate personal protective equipment during handling. Wash thoroughly after handling. Keep containers closed when not in use.

Storage:

Store in a cool, dry, well ventilated place. Keep containers closed when not in use.

Section 8. Exposure Controls and Personal Protection

Engineering Controls: Local mechanical exhaust ventilation recommended.

Protective Equipment

Eyes: Chemical resistant safety goggles

Respirator: If TLV is exceeded use a respirator with appropriate cartridges

Skin Protection: Neoprene gloves and apron

Other: Eyewash station

Exposure Limits - check with provincial authority for applicability

	ACGIH TWA	ACGIH STEL	ACGIH CEL
Polyethylene glycol	not established	not established	not established
Glycols, polyethylene mono(trimethylnonyl)	not established	not established	not established
Polydimethylsiloxane	not established	not established	not established
Ditallow polyethoxyamido ammonium methylsulfate	not established	not established	not established

Section 9. Physical and Chemical Properties

Physical State:	Liquid, opaque, blue	**pH :**	6.7
Odour:	Mild odour	**Specific Gravity:**	0.99
Odour Threshold:	Not available	**Solubility in Water**	100%
Vapour Density:	Not available	**Volatiles**	Not available
Vapour Pressure (mm Hg):	~ 17 @20C	**Coefficient of Water Oil Distribution**	Not available
Evaporation Rate:	Not available	**VOC lb/gal**	0.04
Boiling Point (°C) :	>100	**Freezing Point (°C):**	Not available
Melting Point (°C):	Not available		

Section 10. Stability and Reactivity

Hazardous Polymerization: Hazardous polymerization will not occur if product is used and stored as directed.

Materials and Conditions to Avoid: Strong oxidizers, strong acids, strong bases. Keep away from excess heat.

Reactivity and Conditions:

Addition of bleaches (sodium hypochlorite) can result in the release of hazardous gases causing severe respiratory irritation.

Decomposition Products: CO_2, CO, NOx

Conditions of Chemical Instability: Product is stable if used and stored as directed

Section 11. Toxicological Information

LD50 (oral rat): Not available

Synergistic Materials: None known

Irritancy : Skin, eye, respiratory tract and mucous membrane irritant

Sensitization : Not known to be a sensitizer

Teratogenicity: Not known to be a teratogen

Carcinogenicity: Not known to be carcinogenic

Reproductive Toxicity: Not known to be a reproductive toxin

Mutagenicity: Not known to be a mutagen

Ingredients	LD50 (Oral Rat)	LC50 (Species)	LD50 (species)
Polyethylene glycol	28 g/kg	not available	
Glycols, polyethylene mono(trimethylnonyl)	7460 uL/kg	not available	
Polydimethylsiloxane	>17 gm/kg	not available	
Ditallow polyethoxyamido ammonium methylsulfate	not available	not available	

Section 12. Ecological Information

Ecotoxicity Data: Not available

Chemical fate Data: Not available

Section 13. Disposal Considerations

Consult appropriate municipal, provincial and federal regulatory agencies to determine proper disposal procedures.

Section 14. Transportation Information

Proper Shipping Name: Not regulated

Shipping Class: Not applicable

Product Identification No: Not applicable

Packing Group: Not applicable

Other Instructions: Check transportation labels

Section 15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation (CPR) and the MSDS contains all of the information required by the CPR.

Section 16. Other Information

This MSDS has been prepared to meet WHMIS requirements and is believed to be correct. The information should be used to make an independent determination of the methods to safeguard workers and the environment.

FUJIFILM

900078122

Material Safety Data Sheet

Version 1 **Issuing Date:** 26-Jun-2012

LP-DZ News Developer

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name LP-DZ News Developer

Product code 900078122

Product Use Plate Developer - Newsprint.

Manufactured by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

Distributed in the USA by
FUJIFILM North American Corporation,
Graphic Systems Division
200 Summit Lake Drive
Valhalla, NY 10595-1356

Distributed in Canada by
FUJIFILM Canada, Inc.
600 Suffolk Ct.
Mississauga, Ontario L5R 4G4

Distributed Internationally by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

MSDS are available at the following website(s): http://www.fujifilmusa.com/msds
http://www.fujifilm.ca/msds/search.do

Company Phone Number U.S.A: 800-473-3854 Canada: 800-263-5018

Emergency telephone Transport-CHEMTREC Inside NA: 800-424-9300
Transport CHEMTREC Outside NA: 703-527-3877
Transport-CANUTEC Inside Canada: 613-996-6666
Medical (24 hour)-Prosar: 877-935-7387

2. HAZARDS IDENTIFICATION

WARNING!

Irritating to eyes and skin

Appearance clear light yellow **Physical State @20°C** liquid **Odor** No information available

Potential Health Effects

Principle Routes of Exposure Inhalation, Skin contact, Eye contact.

Acute toxicity

Eyes Irritating to eyes. May cause redness, itching, and pain.

Skin Irritating to skin.

Inhalation May cause irritation of respiratory tract.

Ingestion May be harmful if swallowed.

Chronic Effects

Chronic toxicity Avoid repeated exposure.

Aggravated Medical Conditions None known.

Environmental hazard See Section 12 for additional Ecological Information.

Canada

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class D2B Toxic materials

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
WATER	7732-18-5	80-100%
POLYOXYETHYLENE NAPHTHYLETHER	35545-57-4	3-7%

4. FIRST AID MEASURES

General advice If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

Ingestion If swallowed, do not induce vomiting - seek medical advice.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.

Flash point > 201 °F / > 94 °C

Suitable Extinguishing Media Use CO2, dry chemical, or foam.

Hazardous Combustion Products Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge none

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health Hazard** 2	**Flammability** 1	**Stability** 0	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2	**Flammability** 1	**Physical Hazard** 0	**Personal protection** B

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

Environmental precautions Do not allow material to contaminate ground water system. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment. Cover liquid spill with sand, earth or other noncombustible absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Other information Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Advice on safe handling and storage Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
Engineering Measures	Showers Eyewash stations Ventilation systems

Personal Protective Equipment

Eye/Face Protection	Tightly fitting safety goggles. Face-shield.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear , light yellow	**Odor**	Not available
Odor Threshold	Not available	**Physical State @20°C**	liquid
pH	12.3		
Specific Gravity	1.02	**Molecular Weight**	Not available
Flash point	> 201 °F / > 94 °C	**Autoignition temperature**	Not available
Boiling point/boiling range	Not available	**Melting point/range**	Not available
Flammability Limits in Air	Not available		
Oxidizing Properties	Not available	**Explosive Property Details**	Not available
Water Solubility	completely soluble	**Partition coefficient**	Not available
Evaporation rate	Not available	**Vapor Pressure**	Not available
Vapor density	Not available	**Density**	Not available
EPA VOC (lb/gal)	0	**EPA VOC (g/l)**	0
Viscosity, dynamic	Not available		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible Materials	Strong oxidizing agents. Strong acids. Strong bases.

Conditions to Avoid Excessive heat. Freezing.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Product Information

Irritation

Eyes Irritating to eyes. May cause redness, itching, and pain.
Skin Irritating to skin.
Inhalation May cause irritation of respiratory tract.

Sensitization None known.

Mutagenic Effects None known.

Reproductive Toxicity None known.

Teratogenicity None known.

Chronic toxicity Avoid repeated exposure.

Component Information

Chronic toxicity

Carcinogenicity None known.

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

TDG Not regulated

15. REGULATORY INFORMATION

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Prepared By FUJIFILM Environment, Health and Safety, phone: 800-473-3854

Issuing date: 26-Jun-2012

Revision Note No information available.

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

FUJIFILM

900078123

Material Safety Data Sheet

Version 1 **Issuing Date:** 26-Jun-2012

LP-DRZ News Developer Replenisher

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name LP-DRZ News Developer Replenisher

Product code 900078123

Product Use Plate Developer - Newsprint.

Manufactured by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

Distributed in the USA by
FUJIFILM North American Corporation,
Graphic Systems Division
200 Summit Lake Drive
Valhalla, NY 10595-1356

Distributed in Canada by
FUJIFILM Canada, Inc.
600 Suffolk Ct.
Mississauga, Ontario L5R 4G4

Distributed Internationally by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

MSDS are available at the following website(s): http://www.fujifilmusa.com/msds
http://www.fujifilm.ca/msds/search.do

Company Phone Number U.S.A: 800-473-3854 Canada: 800-263-5018

Emergency telephone Transport-CHEMTREC Inside NA: 800-424-9300
Transport CHEMTREC Outside NA: 703-527-3877
Transport-CANUTEC Inside Canada: 613-996-6666
Medical (24 hour)-Prosar: 877-935-7387

2. HAZARDS IDENTIFICATION

WARNING!

Irritating to eyes and skin

Appearance clear light yellow **Physical State @20°C** liquid **Odor** No information available

Potential Health Effects

Principle Routes of Exposure Inhalation, Skin contact, Eye contact.

Acute toxicity

Eyes Irritating to eyes. May cause redness, itching, and pain.

Skin Irritating to skin.

Inhalation May cause irritation of respiratory tract.

Ingestion May be harmful if swallowed.

Chronic Effects

Chronic toxicity Avoid repeated exposure.

Aggravated Medical Conditions None known.

Environmental hazard See Section 12 for additional Ecological Information.

Canada

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class D2B Toxic materials
E Corrosive material

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
WATER	7732-18-5	80-100%
POLYOXYETHYLENE NAPHTHYLETHER	35545-57-4	3-7%
DIPOTASSIUM SILICATE	10006-28-7	1-5%

4. FIRST AID MEASURES

General advice If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

Ingestion If swallowed, do not induce vomiting - seek medical advice.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.

Flash point > 201 °F / > 94 °C

Suitable Extinguishing Media Use CO2, dry chemical, or foam.

Hazardous Combustion Products Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge none

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health Hazard** 2	**Flammability** 1	**Stability** 0	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2	**Flammability** 1	**Physical Hazard** 0	**Personal protection** B

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

Environmental precautions Do not allow material to contaminate ground water system. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment. Cover liquid spill with sand, earth or other noncombustible absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Other information Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Advice on safe handling and storage Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection Tightly fitting safety goggles. Face-shield.

Skin and body protection Wear protective gloves/clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear , light yellow	**Odor**	Not available
Odor Threshold	Not available	**Physical State @20°C**	liquid
pH	13.10		
Specific Gravity	1.03	**Molecular Weight**	Not available
Flash point	> 201 °F / > 94 °C	**Autoignition temperature**	Not available
Boiling point/boiling range	Not available	**Melting point/range**	Not available
Flammability Limits in Air	Not available		
Oxidizing Properties	Not available	**Explosive Property Details**	Not available
Water Solubility	completely soluble	**Partition coefficient**	Not available
Evaporation rate	Not available	**Vapor Pressure**	Not available
Vapor density	Not available	**Density**	Not available
EPA VOC (lb/gal)	0	**EPA VOC (g/l)**	0
Viscosity, dynamic	Not available		

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases. Metals.

Conditions to Avoid Excessive heat. Freezing.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Product Information

Irritation

Eyes Irritating to eyes. May cause redness, itching, and pain.
Skin Irritating to skin.
Inhalation May cause irritation of respiratory tract.

Sensitization None known.

Mutagenic Effects None known.

Reproductive Toxicity None known.

Teratogenicity None known.

Chronic toxicity Avoid repeated exposure.

Component Information

Chronic toxicity

Carcinogenicity None known.

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers.

US EPA Waste Number D002

14. TRANSPORT INFORMATION

TDG

Proper Shipping Name	Corrosive liquid, basic, inorganic, n.o.s.
UN/ID No	UN3266
Hazard Class	8
Packing Group	III
Description	UN3266, Corrosive liquid, basic, inorganic, n.o.s (DIPOTASSIUM SILICATE), 8, PG III

15. REGULATORY INFORMATION

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Prepared By FUJIFILM Environment, Health and Safety, phone: 800-473-3854

Issuing date: 26-Jun-2012

Revision Note No information available.

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Material Safety Data Sheet

MetaAid-CA10
Neutralizer Solution

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity	**Company:**
Product Name: MetaAid-CA10 General or Generic ID: Acid solution ID number: A10925	Metafix, Inc. 1925 46th Avenue, Lachine (Montreal), Quebec, H8T 2P1, Canada. Tel: 514-633-8663
Emergency Telephone Number: 514-633-8663	

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)	LD50 (oral rat)	LC50	Exposure limit TWA
Water	7732-18-5	88-92	>90 ml/kg	Not available	Not available
Citric acid	77-92-9	8-12	11700mg/kg	Not available	Not available

3. HAZARDS IDENTIFICATION

Potential Health Effects	
Eye: Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue. **Skin:** Can cause severe skin irritation. Symptoms may include redness and burning of skin, and other skin damage. **Swallowing:** Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, and diarrhea). Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury. **Inhalation:** Inhalation of fumes may irritate or burn nose, throat and lungs.	**Symptoms of Exposure:** Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: irritation (nose, throat, airways). **Target Organ Effects:** No data. **Developmental Information:** No data. **Cancer Information:** Not known to cause cancer. Not listed as carcinogen by IARC, NTP or OSHA. **Other Health Effects:** No data. **Primary Route(s) of Entry:** Skin contact.

4. FIRST AID MEASURES:

Eyes:	If person is not breathing, begin artificial respiration.

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention. **Skin:** Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse. **Inhalation:** If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet.	If breathing is difficult, administer oxygen. **Swallowing:** Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended **Note to Physicians:** Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. May aggravate pre-existing respiratory conditions.

5. FIRE FIGHTING MEASURES:

Flash Point:	Non-flammable
Explosive Limit:	Not applicable.
Auto ignition Temperature:	No data.
Hazardous Products of Combustion:	May form carbon dioxide and sulphur dioxide.
Fire and Explosion Hazards:	None
Extinguishing Media:	Not applicable
Fire Fighting Instructions:	Not applicable
NFPA Rating:	Not determined.

6. ACCIDENTAL RELEASE MEASURES.

Small Spill:
Absorb liquid on vermiculite, floor absorbent or other absorbent material Wipe up as much as possible and put in containers for recovery or disposal. Dike and neutralize balance of spill with alkaline (e.g. soda ash) solution. Do not allow run-off into natural water sources.

Large Spill:
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shovelled into containers. Per good environmental management practices, prevent run-off to sewers, streams and other bodies of water.
Stop spill at the source. Cover sewer grates and dike the spill. Absorb spilled material on to absorbents. Shovel materials into container. Close container tightly and dispose of properly.

7. HANDLING AND STORAGE

Wear all recommended personal protective clothing when handling. Avoid contact with eyes. Wash thoroughly after handling. Minimize dust generation.
Avoid breathing fumes. Minimize skin contact. Wash with soap and water before eating, drinking, smoking or using toilet facilities.
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapour, liquid, and/or solid), all hazard precautions, given in the data sheet, must be observed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION.

Eye Protection: Chemical splash goggles and face shield (8" min.) in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.). **Skin Protection:** Wear resistant gloves (consult your safety equipment supplier).To prevent skin contact, wear impervious clothing and boots. **Exposure Guidelines:** No exposure limits established.	**Respiratory Protections:** If overexposure has been determined or documented, a NIOSH/MSHA jointly approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators under specified conditions. (See your safety equipment supplier.). Engineering or administrative controls should be implemented to reduce exposure. **Engineering Controls:** Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

9. PHYSICAL AND CHEMICAL PROPERTIES.

Boiling Point (for product)	> 212.0 F (100.0 C) @ 760 mmHg
Vapour Pressure (for product)	< 17.500 mmHg @ 68.00 F
Specific Vapour Density	Not available
Liquid Density	1.09 g/ml@ 77.00 F or 25.00 C
State	Liquid
Physical Form:	Homogeneous solution
Color.	Bronze
Odour	No data.
pH	1.9
Solubility in water	Complete

10. STABILITY AND REACTIVITY

Hazardous Polymerization: Product will not undergo hazardous polymerization.
Hazardous Decomposition: May form: carbon dioxide and sulphur dioxide if heated.
Chemical Stability: Stable.
Incompatibility: Avoid contact with strong bases.

11. TOXICOLOGICAL INFORMATION

No data.

12. ECOLOGICAL INFORMATION

No data.

13. DISPOSAL CONSIDERATION

Waste Management Information: Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101
DOT Description: NON-REGULATED BY D.O.T.
Container : 5 GAL jug
NOS Component: None
RQ (Reportable Quantity) - 49 CFR 172.101. Not applicable

15. REGULATORY INFORMATION

US Federal Regulations:
TSCA (Toxic Substances Control Act) Status: complies
TSCA (UNITED STATES) The intentional ingredients of this product are listed.
CERCLA RQ - 40 CFR 302.4(a): None listed
SARA 302 Components - 40 CFR 355 Appendix A: None
SARA 313 Components - 40 CFR 372.65: None.
Section 311/312 Hazard Class - 40 CFR 370.2:
Acute (X) Chronic (X) Fire( ) Reactive( ) Pressure( )

16. OTHER INFORMATION

This MSDS was elaborated on	May 28th, 2009
Revised on	Feb 9th, 2010
Revised on	June 29th, 2011

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

FUJIFILM

900019364

Material Safety Data Sheet

Version 1 **Issuing Date:** 27-Jun-2012

FN-6 PS Plate Finisher Gum

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name FN-6 PS Plate Finisher Gum

Product code 900019364

Product Use Plate Finisher for PS Plate Processes.

Manufactured by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

Distributed in the USA by
FUJIFILM North American Corporation,
Graphic Systems Division
200 Summit Lake Drive
Valhalla, NY 10595-1356

Distributed in Canada by
FUJIFILM Canada, Inc.
600 Suffolk Ct.
Mississauga, Ontario L5R 4G4

Distributed Internationally by
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

MSDS are available at the following website(s): http://www.fujifilmusa.com/msds
http://www.fujifilm.ca/msds/search.do

Company Phone Number U.S.A: 800-473-3854 Canada: 800-263-5018

Emergency telephone Transport-CHEMTREC Inside NA: 800-424-9300
Transport CHEMTREC Outside NA: 703-527-3877
Transport-CANUTEC Inside Canada: 613-996-6666
Medical (24 hour)-Prosar: 877-935-7387

2. HAZARDS IDENTIFICATION

WARNING!

Irritating to eyes and skin
Harmful by inhalation
May be harmful if absorbed through skin
May cause allergic skin reaction

Appearance light brown **Physical State @20°C** liquid **Odor** sweet

Potential Health Effects

Principle Routes of Exposure Inhalation, Skin contact, Eye contact.

Acute toxicity

Eyes Irritating to eyes. May cause redness, itching, and pain.

Skin Irritating to skin. May be harmful if absorbed through skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation Harmful by inhalation.

Ingestion May be harmful if swallowed.

Chronic Effects

Chronic toxicity May cause central nervous system depression. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Aggravated Medical Conditions None known.

Environmental hazard See Section 12 for additional Ecological Information.

Canada

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class D2A Very toxic materials

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
WATER	7732-18-5	70-90%
STARCH DERIVATIVE	9049-76-7	10-20%
GUM ARABIC	9000-01-5	1-5%
BENZYL ALCOHOL	100-51-6	1-5%
STARCH PHOSPHATE	11120-02-8	0.5-1.5%
PROPYLENE GLYCOL	57-55-6	0.5-1.5%

4. FIRST AID MEASURES

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Get medical attention if irritation develops and persists. Wash off immediately with plenty of water.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion If swallowed, do not induce vomiting - seek medical advice.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.

Flash point > 201 °F / > 94 °C

Suitable Extinguishing Media Use CO2, dry chemical, or foam.

Hazardous Combustion Products Carbon oxides. Phosphorus oxides.

Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge none

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health Hazard** 2	**Flammability** 1	**Stability** 0	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2	**Flammability** 1	**Physical Hazard** 0	**Personal protection** B

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Use personal protective equipment. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other noncombustible absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Advice on safe handling and storage Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs
BENZYL ALCOHOL				10 ppm TWA
PROPYLENE GLYCOL				10 mg/m³ TWA

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection Tightly fitting safety goggles.

Skin and body protection Wear protective gloves/clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light brown	**Odor**	sweet
Odor Threshold	Not available	**Physical State @20°C**	liquid
pH	3.2		
Specific Gravity	1.10	**Molecular Weight**	Not available
Flash point	> 201 °F / > 94 °C	**Autoignition temperature**	Not available
Boiling point/boiling range	212 °F / 100 °C	**Melting point/range**	Not available
Flammability Limits in Air	Not available		
Oxidizing Properties	Not available	**Explosive Property Details**	Not available
Water Solubility	completely soluble	**Partition coefficient**	Not available
Evaporation rate	Not available	**Vapor Pressure**	Not available
Vapor density	Not available	**Density**	Not available
EPA VOC (lb/gal)	0.244	**EPA VOC (g/l)**	29.28
Viscosity, dynamic	15 cps		

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases.

Conditions to Avoid Excessive heat. Freezing.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Product Information

Irritation

Eyes Irritating to eyes. May cause redness, itching, and pain.

Skin Irritating to skin. May be harmful if absorbed through skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation Harmful by inhalation.

Sensitization None known.

Mutagenic Effects None known.

Reproductive Toxicity None known.

Teratogenicity None known.

Chronic toxicity May cause central nervous system depression. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
GUM ARABIC	16 g/kg (Rat)		
BENZYL ALCOHOL	1230 mg/kg (Rat)	2000 mg/kg (Rabbit)	8.8 mg/L (Rat) 4 h
PROPYLENE GLYCOL	20000 mg/kg (Rat)	20800 mg/kg (Rabbit)	

Chronic toxicity

Carcinogenicity None known.

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
BENZYL ALCOHOL		Pimephales promelas: 460 mg/L at 96 h	
PROPYLENE GLYCOL		Pimephales promelas: 51400 mg/L at 96 h Pimephales promelas: 710 mg/L at 96 h	1000: 48 h Daphnia magna mg/L EC50 Static

Chemical Name	Octonol Water Partition Coefficient (log pow)
BENZYL ALCOHOL	1.1

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

TDG Not regulated

15. REGULATORY INFORMATION

WHMIS Statement This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Prepared By FUJIFILM Environment, Health and Safety, phone: 800-473-3854

Issuing date: 27-Jun-2012

Revision Note No information available.

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

14909 N. Beck Road
Plymouth, MI 48180

For Product Questions call: (270) 737-1500
For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RETAIL NEWS HIGH SPEED YELLOW
Product Code: FTCN273090
MSDS Code: MSD-01011189
Revision Number: 1
Revision Date: 2013-07-02 14:14:22

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Straight-Run Middle Distillate (Petroleum)	1 - 5
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	0.5 - 1.5

Please see Section VIII for product and component exposure guidelines.Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).**III.**

HAZARDS IDENTIFICATION

HMIS Rating **Health:** 1 **Flammability:** 1 **Reactivity:** 0

This product falls under the following WHMIS class:
This product is not controlled. Ce produit n'est pas contrôlé.

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause minor respiratory irritation.
Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.
Eye Contact: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion: No hazard in normal industrial use.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.
Skin Contact:

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA No **NTP** No **IARC 1 & 2A** No **NIOSH** No

RETAIL NEWS HIGH SPEED YELLOW

IARC 2B No

IV. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen.
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Get medical attention if irritation develops or persists.
Ingestion:	No hazard in normal industrial use. Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

V. FIRE FIGHTING MEASURES

Flammability Summary:	Combustible at elevated temperatures NFPA IIIB (NFPA description only; not to be used for shipping purposes)
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.
Fire and/or Explosion Hazards:	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire. It has been reported that diarylide pigments may be subject to breakdown at temperatures above 200C (392F). This decomposition may produce monoazo dyes and 3,3'dichlorobenzidine. 3,3'dichlorobenzidine is a suspect human carcinogen. In the majority of printing inks and coatings systems, temperatures are lower and this thermal breakdown does not occur. It is recommended that diarylide pigments not be used under conditions where thermal breakdown can occur.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide
Flash Point:	93 C (200 F) and greater
Firepoint:	Firepoint not determined.
Upper Flammable/Explosive Limit, % in air:	6.0
Lower Flammable/Explosive Limit, % in air:	1.2

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section VIII of this MSDS

VII. HANDLING AND STORAGE

Handling Precautions:	Mildly irritating material. Avoid unnecessary exposure. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Ground and bond containers when transferring material As with all chemicals, good industrial hygiene practices should be followed when handling this material. Remove contaminated clothing and wash before reuse. Avoid contact with material, avoid breathing dusts or fumes, use only in a well ventilated area.
Storage Conditions:	Store in a cool dry place. Isolate from incompatible materials. Keep away from heat, sparks, and flame. Keep container closed when not in use.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:	Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.
Respiratory Protection:	No respiratory protection required under normal conditions of use.
Eye Protection:	Wear safety glasses with side shields when handling this product. Have an eye wash station available.
Skin Protection:	Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Straight-Run Middle Distillate (Petroleum)		No TLV	No STEL	Not on list
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate		No TLV	No STEL	Not on list

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	45.36
Volatiles, % by vol:	53.14
Volatile Organic Chemicals % by wt:	42.83
Volatile Organic Chemicals % by vol:	50.73
VOC lb/gal	3.39
VOC lb/gal (less water):	3.47
Solids % by weight:	54.64
Solids % by volume	46.86
Specific Gravity:	0.95
Bulk Density (Lb/Gal):	7.91

RETAIL NEWS HIGH SPEED YELLOW

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.

Materials to Avoid/Chemical Incompatibility: Strong oxidizing agents.

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Straight-Run Middle Distillate (Petroleum)	Oral LD50 Rat 5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 1700 mg/m3 4 h
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Oral LD50 Rat >3200 mg/kg

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is not expected to be a hazardous waste.

Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Aluminum sulfate	10043-01-3	CERCLA	0.2
Not on list		HAP	
Hydrotreated light distillate	64742-47-8	NPRI (Cdn)	5.17
D and C Red No. 9	5160-02-1	PROP 65	0.04
Not on list		SARA 313	
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

RETAIL NEWS HIGH SPEED YELLOW

Material Safety Data Sheet

1 . Product and company identification

Product code	:	BI19200387 - 91285859
Product name	:	H/S SP PRO YELLOW
Material uses	:	Printing. Colorant.
Manufacturer/ Distributor	:	Sun Chemical Limited 10 West Drive Brampton, Ontario L6T 4Y4
In case of emergency	:	(800) 424-9300 (U.S.) (703) 527-3887 (International)
Regulatory information	:	Canada: (905) 796-2222 US: (201) 933-4500
Other information	:	(513) 830-8500
Date of revision	:	1/28/2013.

2 . Hazards identification

Physical state	:	Liquid.
Color	:	Yellow.
	:	
WHMIS (Classification)	:	**Not controlled under WHMIS (Canada).**
Emergency overview	:	No known significant effects or critical hazards.
Routes of entry		Dermal contact. Inhalation.

Potential acute health effects

Eyes	:	May cause mild eye irritation.
Skin	:	May cause mild skin irritation.
Inhalation	:	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	:	No known significant effects or critical hazards.

Potential chronic health effects(Long term exposure)

Carcinogenic effects	:	No known significant effects or critical hazards.
Mutagenic effects	:	No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity	:	No known significant effects or critical hazards.

See toxicological information (Section 11)

3 . Composition/information on ingredients

No hazardous ingredient

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Special remarks on fire hazards : Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside. (Soybean oil)

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Yellow.

Taste : Not available.

Odor : Not available.

Odor threshold : Not applicable.

pH : Not tested

Boiling/condensation point : Lowest known value: 227°C (440°F)

Melting/freezing point : May start to solidify at the following temperature: 36 to 60°C (96.8 to 140°F) This is based on data for the following ingredient: Petrolatum.

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

9 . Physical and chemical properties

VOC	:	36.39%
Auto-ignition temperature	:	Lowest known value: >290°C (>554°F) (Petrolatum).
Flammable limits	:	Not tested
Vapor pressure	:	Not available.
Density	:	0.985 g/cm³ (8.217 lbs/gal)
Solubility	:	Insoluble in the following materials: cold water and hot water.
Viscosity	:	Not available.
Vapor density	:	Highest known value: >1 (Air = 1) (Petroleum Middle Distillate). Weighted average: 1.1 (Air = 1)
Evaporation rate	:	Highest known value: <1 (Distillates (petroleum), hydrotreated middle) Weighted average: 0.9compared with butyl acetate
Molecular weight	:	Not applicable.
Molecular formula	:	Not applicable.
Critical temperature	:	Not available.
Ionicity (in water)	:	Not available.
Dispersibility properties	:	Not available.
Physical/chemical properties comments	:	Not available.

10 . Stability and reactivity

Stability and reactivity	:	The product is stable.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Reactivity - Light	:	Not applicable.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Partition coefficient: n-octanol/water : Not applicable.

12 . Ecological information

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

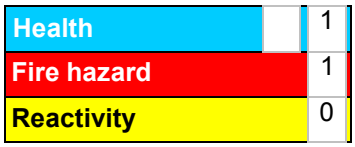
WHMIS (Classification) : Not controlled under WHMIS (Canada).

CANADA INVENTORY (DSL) : At least one component is not listed.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

Hazardous Material Information System (U.S.A.) :



References : Not available.

Other special considerations : Not available.

Version : **0.01**

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

BI19200387

VOLATILE COMPONENT INFORMATION

		US EPA Designate
A. Product Density:		
1.)	0.985 g/cm³ (8.217 lbs/gal)	=(Dc)s
B. Nonvolatile Content:		
1.)	63.62 Weight percent of nonvolatiles in product	=(Wn)s
2.)	59.91 Volume percent of nonvolatiles in product	=(Vn)s
3.)	8.72 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:		
1.)	36.38 Weight percent of total volatiles in product	=(Wv)s
2.)	7.45 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:		
1.)	0 Weight percent of water in product	=(Ww)s
2.)	0 Volume percent of water in product	=(Vw)s
E. Volatile Organic Compounds, (VOCs):		
1.)	36.38 Weight percent of organic volatiles in product	=(Wo)s
2.)	40.1 Volume percent of organic volatiles in product	=(Vo)s
3.)	7.45 Density, lb organic volatiles/gal organic volatiles	=(Do)s
4.)	100 Weight percent of VOCs in total volatiles	=(Wo)v
5.)	100 Volume percent of VOCs in total volatiles	=(Vo)v
F. VOC Content in Product Expressed in Other Terms:		
1.) a.)	2.99 lb VOC / gal Product	
1.) b.)	358.2 grams VOC / liter Product	
2.) a.)	2.99 lb VOC / gal Product less water & exempt solvent	
2.) b.)	358.2 grams VOC / liter Product less water & exempt solvent	
2.) c.)	36.38 Weight percent of organic volatiles (VOC) in Product less water & exempt solvents.	
3.)	4.99 lb VOC / gal total nonvolatiles	

G. Volatiles

Ingredient	CAS number	% by weight	Density (lb/gal)
1.) Hazardous Air Pollutants VOCs (HAPs)		0	
2.) Other VOCs (Non-HAPs)			
Petroleum Middle Distillate	64741-44-2	15.13	6.8
Distillates (petroleum), hydrotreated middle	64742-46-7	10.44	7.17
Severely Treated Light Naphthenic Distillate	64742-53-6	6.18	7.34
distillates (petroleum), sweetened middle	64741-86-2	3.6	6.81
Tridecyl Alcohol	112-70-9	0.43	6.84
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate	6846-50-0	0.3	7.87
White mineral oil (petroleum)	8042-47-5	0.19	6.76
Petrolatum	8009-03-8	0.02	7.51
VOC's present at <0.10% (cumulative)		0.08	6.67
3.) Water	7732-18-5	0	
4.) Ammonia (reported as CAS# 7664-41-7; includes CAS# 1336-21-6)	7664-41-7	0	5.99
5.) Other Non-VOC, Non-HAP Volatiles		0	

NOTE: The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.

SunChemical
a member of the DIC group

Material Safety Data Sheet

1 . Product and company identification

Product code : BI19400873 - 91285921

Product name : H/S SP PRO MAGENTA

Material uses : Printing. Colorant.

Manufacturer/ Distributor : Sun Chemical Limited
10 West Drive
Brampton, Ontario
L6T 4Y4

In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)

Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500

Other information : (513) 830-8500

Date of revision : 1/28/2013.

2 . Hazards identification

Physical state : Liquid.

Color : Red.

:

WHMIS (Classification) : **Not controlled under WHMIS (Canada).**

Emergency overview : No known significant effects or critical hazards.

Routes of entry Dermal contact. Inhalation.

Potential acute health effects

Eyes : May cause mild eye irritation.

Skin : May cause mild skin irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects(Long term exposure)

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

See toxicological information (Section 11)

3 . Composition/information on ingredients

No hazardous ingredient

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds
metal oxide/oxides

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Special remarks on fire hazards : Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside. (Soybean oil)

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Red.

Taste : Not available.

Odor : Not available.

Odor threshold : Not applicable.

pH : Not tested

Boiling/condensation point : Lowest known value: 218°C (424°F)

Melting/freezing point : May start to solidify at the following temperature: 36 to 60°C (96.8 to 140°F) This is based on data for the following ingredient: Petrolatum.

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

9 . Physical and chemical properties

VOC	:	31.38%
Auto-ignition temperature	:	Lowest known value: 260 to 371°C (500 to 699.8°F) (White mineral oil (petroleum)).
Flammable limits	:	Not tested
Vapor pressure	:	Not available.
Density	:	1.012 g/cm³ (8.443 lbs/gal)
Solubility	:	Insoluble in the following materials: cold water and hot water.
Viscosity	:	Not available.
Vapor density	:	Highest known value: >1 (Air = 1) (Petroleum Middle Distillate). Weighted average: 1.1 (Air = 1)
Evaporation rate	:	Highest known value: <1 (Distillates (petroleum), hydrotreated middle) Weighted average: 0.9compared with butyl acetate
Molecular weight	:	Not applicable.
Molecular formula	:	Not applicable.
Critical temperature	:	Not available.
Ionicity (in water)	:	Not available.
Dispersibility properties	:	Not available.
Physical/chemical properties comments	:	Not available.

10 . Stability and reactivity

Stability and reactivity	:	The product is stable.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Reactivity - Light	:	Not applicable.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Partition coefficient: n-octanol/water : Not applicable.

12 . Ecological information

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

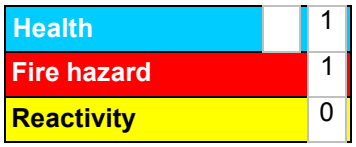
WHMIS (Classification) : Not controlled under WHMIS (Canada).

CANADA INVENTORY (DSL) : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

Hazardous Material Information System (U.S.A.) :



References : Not available.

Other special considerations : Not available.

Version : **0.01**

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

BI19400873

VOLATILE COMPONENT INFORMATION

		US EPA Designate
A. Product Density:		
1.)	1.012 g/cm³ (8.443 lbs/gal)	=(Dc)s
B. Nonvolatile Content:		
1.)	68.62 Weight percent of nonvolatiles in product	=(Wn)s
2.)	64.83 Volume percent of nonvolatiles in product	=(Vn)s
3.)	8.93 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:		
1.)	31.38 Weight percent of total volatiles in product	=(Wv)s
2.)	7.53 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:		
1.)	0 Weight percent of water in product	=(Ww)s
2.)	0 Volume percent of water in product	=(Vw)s
E. Volatile Organic Compounds, (VOCs):		
1.)	31.38 Weight percent of organic volatiles in product	=(Wo)s
2.)	35.16 Volume percent of organic volatiles in product	=(Vo)s
3.)	7.53 Density, lb organic volatiles/gal organic volatiles	=(Do)s
4.)	100 Weight percent of VOCs in total volatiles	=(Wo)v
5.)	100 Volume percent of VOCs in total volatiles	=(Vo)v
F. VOC Content in Product Expressed in Other Terms:		
1.) a.)	2.65 lb VOC / gal Product	
1.) b.)	317.47 grams VOC / liter Product	
2.) a.)	2.65 lb VOC / gal Product less water & exempt solvent	
2.) b.)	317.47 grams VOC / liter Product less water & exempt solvent	
2.) c.)	31.38 Weight percent of organic volatiles (VOC) in Product less water & exempt solvents.	
3.)	4.08 lb VOC / gal total nonvolatiles	

G. Volatiles

Ingredient	CAS number	% by weight	Density (lb/gal)
1.) Hazardous Air Pollutants VOCs (HAPs)		0	
2.) Other VOCs (Non-HAPs)			
Petroleum Middle Distillate	64741-44-2	11.74	6.8
Distillates (petroleum), hydrotreated middle	64742-46-7	8.41	7.17
Severely Treated Light Naphthenic Distillate	64742-53-6	3.3	7.34
White mineral oil (petroleum)	8042-47-5	2.46	6.76
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate	6846-50-0	2.13	7.87
distillates (petroleum), sweetened middle	64741-86-2	2.01	6.81
Dipropylene Glycol Monobutyl Ether	29911-28-2	0.7	7.65
Alcohols, C11-14-iso-, C13-rich	68526-86-3	0.57	7.09
Soybean Oil Alkyd	67700-65-6	0.02	8.39
Severely Hydrotreated Heavy Naphthenic Distillate	64742-52-5	0.03	7.76
Petrolatum	8009-03-8	0.02	7.51
3.) Water	7732-18-5	0	
4.) Ammonia (reported as CAS# 7664-41-7; includes CAS# 1336-21-6)	7664-41-7	0	5.99
5.) Other Non-VOC, Non-HAP Volatiles		0	

NOTE: The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.

Material Safety Data Sheet

1 . Product and company identification

Product code : BI19501184 - 91285922

Product name : H/S SP PRO CYAN

Material uses : Printing. Colorant.

Manufacturer/ Distributor : Sun Chemical Limited
10 West Drive
Brampton, Ontario
L6T 4Y4

In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)

Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500

Other information : (513) 830-8500

Date of revision : 1/28/2013.

2 . Hazards identification

Physical state : Liquid.

Color : Blue.

:

WHMIS (Classification) : **Not controlled under WHMIS (Canada).**

Emergency overview : No known significant effects or critical hazards.

Routes of entry Dermal contact. Inhalation.

Potential acute health effects

Eyes : May cause mild eye irritation.

Skin : May cause mild skin irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects(Long term exposure)

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

See toxicological information (Section 11)

3 . Composition/information on ingredients

No hazardous ingredient

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
metal oxide/oxides

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Special remarks on fire hazards : Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside. (Linseed oil)

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Blue.

Taste : Not available.

Odor : Not available.

Odor threshold : Not applicable.

pH : Not tested

Boiling/condensation point : Lowest known value: 227°C (440°F)

Melting/freezing point : May start to solidify at the following temperature: 36 to 60°C (96.8 to 140°F) This is based on data for the following ingredient: Petrolatum.

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

9 . Physical and chemical properties

VOC	:	33.68%
Auto-ignition temperature	:	Lowest known value: >290°C (>554°F) (Petrolatum).
Flammable limits	:	Not tested
Vapor pressure	:	Not available.
Density	:	0.999 g/cm³ (8.334 lbs/gal)
Solubility	:	Insoluble in the following materials: cold water and hot water.
Viscosity	:	Not available.
Vapor density	:	Highest known value: >1 (Air = 1) (Petroleum Middle Distillate). Weighted average: 1.1 (Air = 1)
Evaporation rate	:	Highest known value: <1 (Severely Treated Light Naphthenic Distillate) Weighted average: 0.9compared with butyl acetate
Molecular weight	:	Not applicable.
Molecular formula	:	Not applicable.
Critical temperature	:	Not available.
Ionicity (in water)	:	Not available.
Dispersibility properties	:	Not available.
Physical/chemical properties comments	:	Not available.

10 . Stability and reactivity

Stability and reactivity	:	The product is stable.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Reactivity - Light	:	Not applicable.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
C.I. Pigment Blue 15	LD Oral	Rat	>15 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

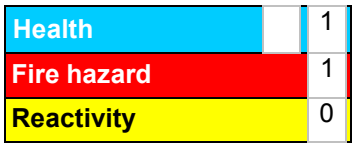
WHMIS (Classification) : Not controlled under WHMIS (Canada).

CANADA INVENTORY (DSL) : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

Hazardous Material Information System (U.S.A.) :



References : Not available.

Other special considerations : Not available.

Version : **0.01**

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

BI19501184

VOLATILE COMPONENT INFORMATION

		US EPA Designate
A. Product Density:		
1.)	0.999 g/cm³ (8.334 lbs/gal)	=(Dc)s
B. Nonvolatile Content:		
1.)	66.32 Weight percent of nonvolatiles in product	=(Wn)s
2.)	59.78 Volume percent of nonvolatiles in product	=(Vn)s
3.)	9.24 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:		
1.)	33.68 Weight percent of total volatiles in product	=(Wv)s
2.)	6.98 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:		
1.)	0 Weight percent of water in product	=(Ww)s
2.)	0 Volume percent of water in product	=(Vw)s
E. Volatile Organic Compounds, (VOCs):		
1.)	33.68 Weight percent of organic volatiles in product	=(Wo)s
2.)	40.19 Volume percent of organic volatiles in product	=(Vo)s
3.)	6.98 Density, lb organic volatiles/gal organic volatiles	=(Do)s
4.)	100 Weight percent of VOCs in total volatiles	=(Wo)v
5.)	100 Volume percent of VOCs in total volatiles	=(Vo)v
F. VOC Content in Product Expressed in Other Terms:		
1.) a.)	2.81 lb VOC / gal Product	
1.) b.)	336.35 grams VOC / liter Product	
2.) a.)	2.81 lb VOC / gal Product less water & exempt solvent	
2.) b.)	336.35 grams VOC / liter Product less water & exempt solvent	
2.) c.)	33.68 Weight percent of organic volatiles (VOC) in Product less water & exempt solvents.	
3.)	4.69 lb VOC / gal total nonvolatiles	

G. Volatiles

Ingredient	CAS number	% by weight	Density (lb/gal)
1.) Hazardous Air Pollutants VOCs (HAPs)		0	
2.) Other VOCs (Non-HAPs)			
Petroleum Middle Distillate	64741-44-2	17.12	6.8
Severely Treated Light Naphthenic Distillate	64742-53-6	9.13	7.34
distillates (petroleum), sweetened middle	64741-86-2	3.68	6.81
Distillates (petroleum), hydrotreated middle	64742-46-7	3.56	7.17
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate	6846-50-0	0.12	7.87
distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	0.01	7.76
Petrolatum	8009-03-8	0.02	7.51
VOC's present at <0.10% (cumulative)		0.03	6.84
3.) Water	7732-18-5	0	
4.) Ammonia (reported as CAS# 7664-41-7; includes CAS# 1336-21-6)	7664-41-7	0	5.99
5.) Other Non-VOC, Non-HAP Volatiles		0	

NOTE: The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.

SunChemical
a member of the DIC group

Material Safety Data Sheet

1 . Product and company identification

Product code : BI19900249 - 91285923

Product name : H/S SP PRO BLACK

Material uses : Printing. Colorant.

Manufacturer/ Distributor : Sun Chemical Limited
10 West Drive
Brampton, Ontario
L6T 4Y4

In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)

Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500

Other information : (513) 830-8500

Date of revision : 1/28/2013.

2 . Hazards identification

Physical state : Liquid.

Color : Black.

:

WHMIS (Classification) : **Not controlled under WHMIS (Canada).**

Emergency overview : No known significant effects or critical hazards.

Routes of entry Dermal contact. Inhalation.

Potential acute health effects

Eyes : May cause mild eye irritation.

Skin : May cause mild skin irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects(Long term exposure)

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

See toxicological information (Section 11)

3 . Composition/information on ingredients

No hazardous ingredient

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Products of combustion : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IIIB

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Special remarks on fire hazards : Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside. (Linseed oil)

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Black.

Taste : Not available.

Odor : Not available.

Odor threshold : Not applicable.

pH : Not tested

Boiling/condensation point : Lowest known value: 227°C (440°F)

Melting/freezing point : May start to solidify at the following temperature: 36 to 60°C (96.8 to 140°F) This is based on data for the following ingredient: Petrolatum.

Flash point : Lowest known value: >93.3°C (200°F) (Closed cup)

9 . Physical and chemical properties

VOC	:	31.84%
Auto-ignition temperature	:	Lowest known value: >290°C (>554°F) (Petrolatum).
Flammable limits	:	Not tested
Vapor pressure	:	Not available.
Density	:	1.04 g/cm³ (8.676 lbs/gal)
Solubility	:	Not available.
Viscosity	:	Not available.
Vapor density	:	Highest known value: >1 (Air = 1) (Petroleum Middle Distillate). Weighted average: 1.1 (Air = 1)
Evaporation rate	:	Highest known value: <1 (Severely Treated Light Naphthenic Distillate) Weighted average: 0.9compared with butyl acetate
Molecular weight	:	Not applicable.
Molecular formula	:	Not applicable.
Critical temperature	:	Not available.
Ionicity (in water)	:	Not available.
Dispersibility properties	:	Not available.
Physical/chemical properties comments	:	Not available.

10 . Stability and reactivity

Stability and reactivity	:	The product is stable.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Reactivity - Light	:	Not applicable.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
C. I. Pigment Black 7	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Not regulated.

15 . Regulatory information

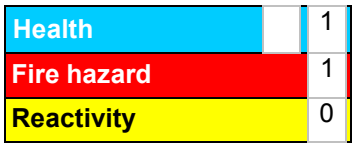
WHMIS (Classification) : Not controlled under WHMIS (Canada).

CANADA INVENTORY (DSL) : At least one component is not listed.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

Hazardous Material Information System (U.S.A.) :



References : Not available.

Other special considerations : Not available.

Version : **0.01**

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

BI19900249

VOLATILE COMPONENT INFORMATION

		US EPA Designate
A. Product Density:		
1.)	1.04 g/cm³ (8.676 lbs/gal)	=(Dc)s
B. Nonvolatile Content:		
1.)	68.16 Weight percent of nonvolatiles in product	=(Wn)s
2.)	60.74 Volume percent of nonvolatiles in product	=(Vn)s
3.)	9.73 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:		
1.)	31.84 Weight percent of total volatiles in product	=(Wv)s
2.)	7.03 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:		
1.)	0 Weight percent of water in product	=(Ww)s
2.)	0 Volume percent of water in product	=(Vw)s
E. Volatile Organic Compounds, (VOCs):		
1.)	31.84 Weight percent of organic volatiles in product	=(Wo)s
2.)	39.27 Volume percent of organic volatiles in product	=(Vo)s
3.)	7.03 Density, lb organic volatiles/gal organic volatiles	=(Do)s
4.)	100 Weight percent of VOCs in total volatiles	=(Wo)v
5.)	100 Volume percent of VOCs in total volatiles	=(Vo)v
F. VOC Content in Product Expressed in Other Terms:		
1.) a.)	2.76 lb VOC / gal Product	
1.) b.)	331.03 grams VOC / liter Product	
2.) a.)	2.76 lb VOC / gal Product less water & exempt solvent	
2.) b.)	331.03 grams VOC / liter Product less water & exempt solvent	
2.) c.)	31.84 Weight percent of organic volatiles (VOC) in Product less water & exempt solvents.	
3.)	4.55 lb VOC / gal total nonvolatiles	

G. Volatiles

Ingredient	CAS number	% by weight	Density (lb/gal)
1.) Hazardous Air Pollutants VOCs (HAPs)		0	
2.) Other VOCs (Non-HAPs)			
Petroleum Middle Distillate	64741-44-2	17.37	6.8
Severely Treated Light Naphthenic Distillate	64742-53-6	6.7	7.34
Distillates (petroleum), hydrotreated middle	64742-46-7	6.3	7.17
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate	6846-50-0	1	7.87
distillates (petroleum), sweetened middle	64741-86-2	0.26	6.81
White mineral oil (petroleum)	8042-47-5	0.13	6.76
Petrolatum	8009-03-8	0.02	7.51
VOC's present at <0.10% (cumulative)		0.07	7.15
3.) Water	7732-18-5	0	
4.) Ammonia (reported as CAS# 7664-41-7; includes CAS# 1336-21-6)	7664-41-7	0	5.99
5.) Other Non-VOC, Non-HAP Volatiles		0	

NOTE: The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.

Beshada, Eshetu (CWS)

From: Beshada, Eshetu (CWS)
Sent: September-12-14 9:20 AM
To: 'Ross Szwec'
Cc: Tim Hopper
Subject: File 5082.10 Transcontinental Printing - EAP Review
Attachments: Transcontinental Printing - EAP - Initial review ; Air Quality.pdf

Hello Ross,

The EAP review period for the subject proposal has been closed. Please address the attached concern from a TAC member. In the mean time I am still waiting for the information requested in the attached email back in July. It was a request to provide detail list of VOC species in each product whose MSDS was provided. We have also discussed about this on the phone.

Regards

Eshetu Beshada, PhD, P. Eng.
Municipal and Industrial Section
Environmental Approvals Branch
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