

Safety Data Sheet

FOR REGULATORY AND SDS QUESTIONS (U.S. AND CANADA): CALL THE PRODUCT STEWARDSHIP LINE 1- 908-791-2336 9 AM TO 6 PM ET (Mon-Fri)

Section 1. Identification

Product name	: 1589 Soldering Flux
Product code	: 4060023
Product type	: Liquid.
Date of issue/Date of revision	: January 23 2022.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
Alpha Assembly Solutions Inc. 800 West Thorndale Avenue Itasca, IL 60143 USA	1-800-253-7837 1-630-616-4000	DOMESTIC NORTH AMERICA 202-464-2554
ALPHA METALS MEXICO SA DE CV Ave Nafta 800, Parque Industrial STIVA Apodaca NL 66600 Mexico	Tel: +52 81 1156-6602	Tel: 01 800 022 1400 Tel: +52 55 5559-1588
Alpha Assembly Solutions Brasil Soldas Ltda Rio Jaguarão, 1540 - Vila Buriti Manaus Amazonas 69072-055 Brasil	Tel: 55 92 3614-7400	Tel: 55 92 3614-7423

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (Narcotic effects) - Category 3
GHS label elements	
Hazard pictograms	
Signal word	: Danger
Hazard statements	 Highly flammable liquid and vapor. Causes serious eye irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness.
Precautionary statements	
Prevention	: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Section 2. Hazards identification

Response	: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	 Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Ingredient name	%	CAS number
Isopropyl alcohol	70-80	67-63-0
Rosin/Resin	10-20	-
Additive	0.1-1.0	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first	aid measures
Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 4. First aid measures

Most important symptoms/e	ffec	cts, acute and delayed
Potential acute health effect	ts	
Eye contact	:	Causes serious eye irritation.
Inhalation	:	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact	1	May cause an allergic skin reaction.
Ingestion	1	Can cause central nervous system (CNS) depression.
Over-exposure signs/symp	<u>ton</u>	<u>15</u>
Eye contact	:	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	:	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	:	Adverse symptoms may include the following: irritation redness
Ingestion	:	No specific data.
Indication of immediate med		l attention and special treatment needed, if necessary
Notes to physician	:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	1	No specific treatment.
Protection of first-aiders		No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
See toxicological informatio	n (S	Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO2, water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.
Specific hazards arising from the chemical	: Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds

Section 5. Fire-fighting measures

Special protective actions for fire-fighters	: 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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.

Section 6. Accidental release measures

Personal precautions, protec	tive equipment and emergency procedures
For non-emergency personnel	: 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
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 and materials for co	ntainment and cleaning up
Small spill	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling Protective measures Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. : Eating, drinking and smoking should be prohibited in areas where this material is Advice on general handled, stored and processed. Workers should wash hands and face before eating, occupational hygiene drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Continued on next page

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Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities	: Store in accordance with local regulations. Store in a segregated and approved area. 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. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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. See Section 10 for incompatible materials before handling or use.
	contamination. See Section 10 for incompatible materials before handling of use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Isopropyl alcohol	ACGIH TLV (United States, 3/2017). Notes: Refers to Appendix A Carcinogens. ACGIH 2003 Adoption STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 1225 mg/m ³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 980 mg/m ³ 10 hours. TWA: 400 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 980 mg/m ³ 8 hours. TWA: 400 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 1225 mg/m ³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 980 mg/m ³ 8 hours. TWA: 980 mg/m ³ 8 hours.	
Rosin/Resin	ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.	
opropriate engineering ontrols	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.	
nvironmental exposure ontrols	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.	
dividual protection measure	9 <u>9</u>	
lygiene 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.	
Eye/face protection	: 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.	
Skin protection	5 5 F F F F F F F 5 5 5 5 5 5 5 5 5 5 5	

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Section 8. Exposure controls/personal protection

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Hand protection	: 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	: Appropriate footwear and any additional skin protection measures 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 protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Liquid.
Color	: Amber.
Odor	: Alcohol-like.
Odor threshold	: Not available.
рН	: Not available.
Melting point	: Not available.
Boiling point	: 82°C (179.6°F)
Flash point	: Closed cup: 12°C (53.6°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: 4.3 kPa (32.25258 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: Not available.
Solubility	: Not available.
VOC	: 791 g/l
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: 425°C (797°F)
Decomposition temperature	: Not available.
Viscosity	: Not available.
Aerosol product	

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.	
Chemical stability	: The product is stable.	
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.	
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.	
Incompatibility with various substances	: Reactive or incompatible with the following materials: oxidizing materials and acids.	
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products shound be produced.	blu
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.	

Section 11. Toxicological information

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion. Acute toxicity								
Product/ingredient name	Result	Species	Dose	Exposure				
Isopropyl alcohol	LD50 Dermal LD50 Oral	Rabbit Rat	6290 mg/kg 4.7 g/kg	-				
Rosin/Resin	LD50 Oral LD50 Oral	Mouse Rat	2.2 g/kg 3 g/kg	-				
Additive	LD50 Oral	Rat	1070 mg/kg	-				

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Isopropyl alcohol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

No applicable toxicity data

Additional information:

Classification

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Additive	Equivocal Equivocal	-		Mouse Mouse	Intraperitoneal: 3825 mg/ kg Oral: 12 g/	
	Equivola			Mouse	kg	

Section 11. Toxicological information

Teratogenicity

Not available.

Specific target organ toxicity

Specific target organ toxici	r x			Devite of	Tanatan
Name			Category	Route of exposure	Target organs
Isopropyl alcohol			Category 3	Not applicable.	Narcotic effects
Specific target organ toxici Not available.	ty (repeated	<u>exposure)</u>			
Aspiration hazard Not available.					
Information on the likely routes of exposure	: Not avai	lable.			
Potential acute health effects	<u>s</u>				
Eye contact	: Causes	serious eye irritati	ion.		
Inhalation	: Can cau dizzines		s system (CNS) de	epression. May cause	e drowsiness or
Skin contact	: May cau	ise an allergic skir	n reaction.		
Ingestion	: Can cau	se central nervou	s system (CNS) de	epression.	
Symptoms related to the phy	<u>/sical, chem</u>	ical and toxicold	ogical characteris	<u>tics</u>	
Eye contact	: Adverse pain or in watering redness	rritation	nclude the following	g:	
Inhalation	nausea headach drowsine dizzines	or vomiting ne ess/fatigue	nclude the following	g:	
Skin contact	: Adverse irritation redness		nclude the following	g:	
Ingestion	: No spec				
Delayed and immediate effect	cts and also	chronic effects	from short and lo	<u>ng term exposure</u>	
Short term exposure					
Potential immediate effects	: Not avai	lable.			
Potential delayed effects	: Not avai	lable.			
Long term exposure					
Potential immediate effects	: Not avai	lable.			
Potential delayed effects	: Not avai	lable.			
Potential chronic health eff					
General	very low	levels.	-	nay occur when subs	equently exposed to
Carcinogenicity	: No know	n significant effec	cts or critical hazar	ds.	
Mutagenicity Teratogenicity		-	cts or critical hazar		
	 Nia lua au 		cts or critical hazar	de	

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Section 11. Toxicological information

Developmental effects: No known signifFertility effects: No known signif

: No known significant effects or critical hazards.

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	4458.1 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Isopropyl alcohol	Acute EC50 10100 mg/l Fresh water Acute LC50 1400000 µg/l Marine water Acute LC50 4200 mg/l Fresh water	Daphnia - Daphnia magna Crustaceans - Crangon crangon Fish - Rasbora heteromorpha	48 hours 48 hours 96 hours
Additive	LC50 9 mg/l	Algae	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Isopropyl alcohol Rosin/Resin Additive	0.05 1.9 to 7.7 -3.28	- - -	low high low
Mobility in soil			

Soil/water partition : Not available. coefficient (Koc) : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

1589 Soldering Flux

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	ΙΑΤΑ
UN number	UN1219	UN1219	UN1219	UN1219	UN1219	UN1219
UN proper shipping name	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution
Transport hazard class(es)	3	3	3	3	3	3
Packing group	11	11	11	11	Ш	11
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information - DOT Classification	ERG# 129					
Additional information - TDG Classification						
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Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

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U.S. Federal regulations	 TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found. TSCA 5(a)2 final significant new use rule (SNUR): No products were found. TSCA 12(b) one-time export notification: No products were found. TSCA 12(b) annual export notification: No products were found.
United States inventory (TSCA 8b)	: All components are listed or exempted.
SARA 302/304 Composition/information	<u>on ingredients</u>
No products were found.	
SARA 311/312 Classification	: Fire hazard Immediate (acute) health hazard
Canada Canada inventory International lists	: All components are listed or exempted.
<u>National inventory</u> Australia	: All components are listed or exempted.
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Section 15. Regulatory information

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China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
Viet Nam	: Not determined.

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Section 16. Other information

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



Procedure used to derive the classification

Classification	Justification
Flam. Liq. 2, H225 Eye Irrit. 2A, H319 Skin Sens. 1, H317	On basis of test data Calculation method Calculation method
STOT SE 3, H336	Calculation method

HISTORY	
Date of	issue/Date

revision

Prepared by

: 1

- Version
- : Regulatory Affairs Department enthone.msds@macdermidenthone.com

Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = International Air Transport Association IBC = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
	UN - United Nations

Indicates information that has changed from previously issued version.

Notice to reader

Section 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.

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