SAFETY DATA SHEET



Section 1. Identification

GHS product identifier	:	170 Hardner
Product code	:	PLU170
Other means of identification	:	Not available.
Product type	:	Liquid.
Material uses	:	Epoxy curing
Supplier's details	:	Plusco, Ince 14518 Henry Rd. Houston, TX 77060
		Non-Emergency phone: (713) 880-0316
e-mail address of person responsible for this SDS	:	plusco@plus-co.com
Emergency telephone number (24h/7day)	:	Plusco, Inc.: (800) 275-1875

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	: ACUTE TOXICITY (dermal) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3
GHS label elements	
Hazard pictograms	
Signal word	: Danger
Hazard statements	 Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.
Precautionary statements	: Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated

Section 2. Hazards identification

clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. 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. Immediately call a POISON CENTER or physician. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not		None known.
result in classification		

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

triethylenetetramine, propoxylated60 - 100Triethylene tetramine13 - 30	26950-63-0 112-24-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation. **Occupational exposure limits, if available, are listed in Section 8.**

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes 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. 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	Get medical attention immediately. Call a poison center or physician. 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 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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	ffects, acute and delayed
Potential acute health effect	<u>ots</u>
Eye contact	: Causes serious eye damage.
Inhalation	: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	: Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
Ingestion	: May cause burns to mouth, throat and stomach.
Over-exposure signs/symp	<u>toms</u>
Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Adverse symptoms may include the following: stomach pains
Indication of immediate med	lical attention and special treatment needed, if necessary
Notes to physician	 Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes 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.

Most important symptoms/effects, acute and delayed

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point	: Closed cup: >93.33°C (>200°F) [ASTM D 93 (Pensky-Martens Closed Cup)]
Extinguishing media Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
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.
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.

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Section 6. Accidental release measures

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Personal precautions, protect	İ۷	e 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	•	If specialised 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). Water polluting material. May be harmful to the environment if released in large quantities.
Methods and materials for containment and cleaning up	:	Stop leak if without risk. Move containers from spill area. 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 breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:

Section 7. Handling and storage

	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. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	: 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. Store locked up. 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.

Section 8. Exposure controls/personal protection

Control parameters

Appropriate engineering controls Environmental exposure controls	 If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. 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.
Individual protection measure	<u>Ires</u>
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. 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
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.
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.

Section 8. Exposure controls/personal protection

Respiratory protection	:	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.
Thermal hazards	:	Not available.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Liquid.
Color	: Straw.
Odor	: Amine-like.
Odor threshold	: Not available.
рН	: Not available.
Melting point/Freezing point	: Not available.
Boiling/condensation point	: >204.44°C (>400°F)
Flash point	: Closed cup: >93.33°C (>200°F) [ASTM D 93 (Pensky-Martens Closed Cup)]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: <0.13 kPa (<1 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1
Solubility in water	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Density	: 0 g/cm ³
Viscosity	: Not available.

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	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
triethylenetetramine, propoxylated	-	LD50 Dermal	Rabbit	>1000 mg/kg
	-	LD50 Oral	Rat	>2000 mg/kg
Triethylene tetramine	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit - Male, Female	1465.4 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	1716.2 mg/kg

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Triethylene tetramine	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Skin - Corrosive
	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Eyes - Corrosive

Conclusion/Summary

Skin	:	triethylenetetramine, propoxylated Triethylene tetramine	No additional information. Corrosive to the skin.
Eyes	:	triethylenetetramine, propoxylated Triethylene tetramine	No additional information. Corrosive to eyes.
Respiratory	:	triethylenetetramine, propoxylated Triethylene tetramine	No additional information. No additional information.

Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
Triethylene tetramine	-	skin	Guinea pig	Sensitizing

Mutagenicity

Product/ingredient name	Test	Result
Triethylene tetramine	Experiment: In vitro Subject: Mammalian-Animal Experiment: In vivo Subject: Mammalian-Animal	Negative Negative

Conclusion/Summary

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Triethylene tetramine

The weight of the scientific evidence indicates that this material is non-genotoxic.

Carcinogenicity

Section 11. Toxicological information

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Product/ingredient name	Test	Species	Dose	Exposure	Result/Result type
Triethylene tetramine	OECD 451 Carcinogenicity Studies	Mouse - Male	42 mg/kg	3 days per week	Negative - Dermal - NOAEL

Reproductive toxicity

Conclusion/Summary

Triethylene tetramine

In accordance with column 2 of Annex VII - X of Regulation (EC) No 1907/2006, the test for this property of the substance does not need to be conducted.

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Triethylene tetramine	Developmental	Rat	Negative - Oral
	Toxicity Study	Rabbit	Negative - Dermal

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely : Not available. routes of exposure

Potential acute health effects

Eye contact	: Causes serious eye damage.
Inhalation	: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	: Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
Ingestion	: May cause burns to mouth, throat and stomach.
Symptoms related to t	he physical, chemical and toxicological characteristics
Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: No specific data.
Skin contact	Adverse symptoms may include the following:

Skin contact : Adverse symptoms may include the following: pain or irritation redness blistering may occur

Section 11. Toxicological information

Ingestion	:	Adverse symptoms may include the following: stomach pains
Delayed and immediate	effe	cts and also chronic effects from short and long term exposure
Short term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	:	Not available.
Long term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	:	Not available.

Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result	
Triethylene tetramine	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg/d	
General :	Once sensitized, a sev very low levels.	ere allergic reaction may	occur when subs	equently exposed to	
Carcinogenicity :	No known significant e	No known significant effects or critical hazards.			
Mutagenicity :	No known significant e	No known significant effects or critical hazards.			
Teratogenicity :	No known significant effects or critical hazards.				
Developmental : effects	No known significant e	ffects or critical hazards.			
Fertility effects :	No known significant e	ffects or critical hazards.			
Numerical measures of toxi	<u>city</u>				

Acute toxicity estimates

Route	ATE value
Oral	7894.5 mg/kg
Dermal	1163 mg/kg

Other information

: Not available.

Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Test	Endpoint		Exposure	Species	Result	
Triethylene tetramine	No official guidelines	Acute	EC50	30 minutes Static	Bacteria	800	mg/l
	EU EC C.2 Acute Toxicity for Daphnia	Acute	EC50	48 hours Static	Daphnia	31.1	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Semi-static	Algae	20	mg/l
	EPA OPPTS EPA OTS 797.1400	Acute	LC50	96 hours Static	Fish	330	mg/l
	No official guidelines	Chronic	EC10	30 minutes Static	Bacteria	42.5	mg/l
	OECD OECD 202: Part II (Daphnia sp., Reproduction Test	Chronic	EC10	21 days Semi-static	Daphnia	1.9	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic	NOECr	72 hours Semi-static	Algae	<2.5	mg/l

Persistence and degradability

Product/ingredient name	Test	Period	Result
Triethylene tetramine	OECD 302A Inherent Biodegradability: Modified SCAS Test OECD 301D Ready Biodegradability - Closed Bottle Test	84 days 162 days	20 % 0 %
Conclusion/Summary	: Triethylene tetramine Not biodeg	gradable	

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Triethylene tetramine	-2.65	99	low

Mobility in soil

Not available.

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

Other ecological information

BOD5	: Not determined.
COD	: Not determined.
тос	: Not determined.

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

Section 13. Disposal considerations

containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

- **DOT** : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine, propoxylated, Triethylene tetramine)
- **TDG** : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine, propoxylated, Triethylene tetramine)
- **IMDG** : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine, propoxylated, Triethylene tetramine)
- **IATA** : Polyamines, liquid, corrosive, n.o.s. (Triethylenetetramine, propoxylated, Triethylene tetramine)

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	UN2735	8	II	CORROSANS 8	-
TDG Classification	UN2735	8	II		-
IMDG Classification	UN2735	8	II		<u>Emergency</u> <u>schedules (EmS)</u> F-A S-B
IATA Classification	UN2735	8	11	8	Passenger and Cargo Aircraft Quantity limitation: 1 L Packaging instructions: 851 Cargo Aircraft Only Quantity limitation: 30 L Packaging instructions: 855

PG* : Packing group

Section 15. Regulatory information

Safety, health and enviror	nmental regulations specific for the product
United States Regulation	<u>IS</u>
TSCA 8(b) inventory	: All components are listed or exempted.
TSCA 5(a)2 final significant new use rule (SNUR)	: No ingredients listed.
TSCA 5(e) substance consent order	: No ingredients listed.
TSCA 12(b) export notification	: No ingredients listed.
SARA 311/312	: Immediate (acute) health hazard
Clean Air Act - Ozone Depleting Substances (ODS)	: This product does not contain nor is it manufactured with ozone depleting substances.
SARA 313	: No ingredients listed.
CERCLA Hazardous substances	: No ingredients listed.
State regulations	
PENNSYLVANIA - RTK	: Triethylene tetramine
California Prop 65	This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.
Canadian regulations	
CEPA DSL	: All components are listed or exempted.
WHMIS Classes	 Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2B: Material causing other toxic effects (Toxic). Class E: Corrosive material
	en classified in accordance with the hazard criteria of the Controlled Products MSDS contains all the information required by the Controlled Products Regulations.
Brazil Regulations	
Classification system used	: Norma ABNT-NBR 14725-2:2012
International lists	 Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): All components are listed or exempted. Japan inventory: All components are listed or exempted. Korea inventory: All components are listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

exempted. Philippines inventory (PICCS): At least one component is not listed.

Section 15. Regulatory information

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Taiwan inventory (CSNN): Not determined.

Section 16. Other information

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

Health	*	3
Flammability		1
Physical hazards		
Personal protection		

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection
Association (U.S.A.)



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Notice to reader

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

Section 16. Other information

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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