



Poly 144NF B Satin/Matte

Tri-Chem Corporation

Version No: 3.3

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

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S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Poly 144NF B Satin/Matte
Synonyms	Not Available
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Specialty flooring curative
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Tri-Chem Corporation
Address	431 Stephenson Hwy. Troy, MI 48083 United States
Telephone	1-800-465-6255
Fax	Not Available
Website	www.tri-chem.com
Email	info@tri-chem.com

Emergency phone number

Association / Organisation	INFOTRAC
Emergency telephone numbers	1-800-535-5053
Other emergency telephone numbers	1-800-523-5677

SECTION 2 HAZARD(S) IDENTIFICATION



Classification of the substance or mixture



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Eye Irritation Category 2A, Respiratory Sensitizer Category 1, Acute Aquatic Hazard Category 3, Acute Toxicity (Inhalation) Category 1, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1, Chronic Aquatic Hazard Category 3
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Label elements

Hazard pictogram(s)	 
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SIGNAL WORD	DANGER
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Hazard statement(s)

H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H330	Fatal if inhaled.
H315	Causes skin irritation.

H317	May cause an allergic skin reaction.
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H412	Harmful to aquatic life with long lasting effects.
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**Hazard(s) not otherwise classified**

Not Applicable

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P271	Use only outdoors or in a well-ventilated area.

Precautionary statement(s) Response

P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353	IF ON SKIN (or hair) Remove/take off immediately all contaminated cloth.. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
822-06-0	<1	<u>hexamethylene diisocyanate</u>
28182-81-2	60-90	<u>hexamethylene diisocyanate polymer</u>
666723-27-9	5-15	<u>hexamethylene isocyanate blocked polymer</u>
9046-01-9	1-5	<u>tridecyl alcohol, ethoxylated, phosphated</u>
53880-05-0	5-10	<u>isophorone diisocyanate homopolymer</u>
123-86-4	1-5	<u>n-butyl acetate</u>
34590-94-8	1-5	<u>dipropylene glycol monomethyl ether</u>

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.

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▶
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▶

Poly 144NF B Satin/Matte**Inhalation**

If fumes or combustion products are inhaled remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
Transport to hospital, or doctor, without delay.

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	Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.
Ingestion	<ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For sub-chronic and chronic exposures to isocyanates:

- ▶ This material may be a potent pulmonary sensitiser which causes bronchospasm even in patients without prior airway hyperreactivity.
- ▶ Clinical symptoms of exposure involve mucosal irritation of respiratory and gastrointestinal tracts.
- ▶ Conjunctival irritation, skin inflammation (erythema, pain vesiculation) and gastrointestinal disturbances occur soon after exposure.
- ▶ Pulmonary symptoms include cough, burning, substernal pain and dyspnoea.
- ▶ Some cross-sensitivity occurs between different isocyanates.
- ▶ Noncardiogenic pulmonary oedema and bronchospasm are the most serious consequences of exposure. Markedly symptomatic patients should receive oxygen, ventilatory support and an intravenous line.
- ▶ Treatment for asthma includes inhaled sympathomimetics (epinephrine [adrenalin], terbutaline) and steroids.
- ▶ Activated charcoal (1 g/kg) and a cathartic (sorbitol, magnesium citrate) may be useful for ingestion.
- ▶ Mydriatics, systemic analgesics and topical antibiotics (Sulamyd) may be used for corneal abrasions.
- ▶ There is no effective therapy for sensitised workers.

[Ellenhorn and Barceloux; Medical Toxicology]

NOTE: Isocyanates cause airway restriction in naive individuals with the degree of response dependant on the concentration and duration of exposure. They induce smooth muscle contraction which leads to bronchoconstrictive episodes. Acute changes in lung function, such as decreased FEV1, may not represent sensitivity.

[Karol & Jin, Frontiers in Molecular Toxicology, pp 56-61, 1992]

Personnel who work with isocyanates, isocyanate prepolymers or polyisocyanates should have a pre-placement medical examination and periodic examinations thereafter, including a pulmonary function test. Anyone with a medical history of chronic respiratory disease, asthmatic or bronchial attacks, indications of allergic responses, recurrent eczema or sensitisation conditions of the skin should not handle or work with isocyanates. Anyone who develops chronic respiratory distress when working with isocyanates should be removed from exposure and examined by a physician. Further exposure must be avoided if a sensitivity to isocyanates or polyisocyanates has developed.

SECTION 5 FIRE-FIGHTING MEASURES**Extinguishing media**

- ▶ Small quantities of water in contact with hot liquid may react violently with generation of a large volume of rapidly expanding hot sticky semi-solid foam.
- ▶ Presents additional hazard when fire fighting in a confined space.
- ▶ Foam.
- ▶ Dry chemical powder.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Special protective equipment and precautions for fire-fighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus.
Fire/Explosion Hazard	<p>-Combustible. -Moderate fire hazard when exposed to heat or flame. Combustion products include: carbon dioxide (CO₂) isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NO_x) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material. May emit corrosive fumes. When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately.
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Personal Protective Equipment advice is contained in Section 8 of the SDS.



SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ DO NOT allow clothing wet with material to stay in contact with skin
Other information	<p>for commercial quantities of isocyanates:</p> <ul style="list-style-type: none"> ▶ Isocyanates should be stored in adequately banded areas. Nothing else should be kept within the same banding. ▶ Store in original containers. ▶ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid cross contamination between the two liquid parts of product (kit). ▶ If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur. ▶ Avoid reaction with water, alcohols and detergent solutions. Isocyanates are electrophiles, and as such they are reactive toward a variety of nucleophiles including alcohols, amines, and even water. ▶ A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol. ▶ The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	hexamethylene diisocyanate	1,6-Diisocyanatohexane; HDI; Hexamethylene-1,6-diisocyanate; 1,6-Hexamethylene diisocyanate; HMDI	0.005 ppm / 0.035 mg/m ³	Not Available	0.020 ppm / 0.140 mg/m ³	[10-minute]
US ACGIH Threshold Limit Values (TLV)	hexamethylene diisocyanate	Hexamethylene diisocyanate	0.005 ppm	Not Available	Not Available	TLV® Basis: URT irr; resp sens
US NIOSH Recommended Exposure Limits (RELs)	n-butyl acetate	Butyl acetate, n-Butyl ester of acetic acid, Butyl ethanoate	150 ppm / 710 mg/m ³	950 mg/m ³ / 200 ppm	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	n-butyl acetate	Butyl acetate, all isomers	50 ppm	150 ppm	Not Available	TLV® Basis: Eye & URT irr
US OSHA Permissible Exposure Levels (PELs) - Table Z1	n-butyl acetate	n-Butyl-acetate	150 ppm / 710 mg/m ³	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	dipropylene glycol monomethyl ether	Dipropylene glycol monomethyl ether, Dowanol® 50B	100 ppm / 600 mg/m ³	900 mg/m ³ / 150 ppm	Not Available	[skin]
US ACGIH Threshold Limit Values (TLV)	dipropylene glycol monomethyl ether	(2-Methoxymethylethoxy)propanol	100 ppm	150 ppm	Not Available	TLV® Basis: Eye & URT irr; CNS impair
US OSHA Permissible Exposure Levels (PELs) - Table Z1	dipropylene glycol monomethyl ether	Dipropylene glycol methyl ether	100 ppm / 600 mg/m ³	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
hexamethylene diisocyanate	Hexamethylene diisocyanate; (1,6-Diisocyanatohexane)	0.018 ppm	0.2 ppm	3 ppm
hexamethylene diisocyanate polymer	Hexamethylene diisocyanate polymer	7.8 mg/m ³	86 mg/m ³	510 mg/m ³
isophorone diisocyanate homopolymer	Isocyanate-bearing waste (as CNs N.O.S.)	6 mg/m ³	8.3 mg/m ³	50 mg/m ³
n-butyl acetate	Butyl acetate, n-	Not Available	Not Available	Not Available
dipropylene glycol monomethyl ether	Dipropylene glycol methyl ether	150 ppm	1700 ppm	9900 ppm

Ingredient	Original IDLH	Revised IDLH
hexamethylene diisocyanate	Not Available	Not Available
hexamethylene diisocyanate polymer	Not Available	Not Available
hexamethylene isocyanate blocked polymer	Not Available	Not Available

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tridecyl alcohol, ethoxylated, phosphated	Not Available	Not Available
isophorone diisocyanate homopolymer	Not Available	Not Available
n-butyl acetate	1,700 ppm	Not Available
dipropylene glycol monomethyl ether	600 ppm	Not Available



Exposure controls

Appropriate engineering controls	<ul style="list-style-type: none"> ▶ All processes in which isocyanates are used should be enclosed wherever possible. ▶ Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards. <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	<p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <ul style="list-style-type: none"> ▶ Do NOT wear natural rubber (latex gloves). ▶ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves. ▶ Protective gloves and overalls should be worn as specified in the appropriate national standard. ▶ DO NOT use skin cream unless necessary and then use only minimum amount. ▶ Isocyanate vapour may be absorbed into skin cream and this increases hazard.
Body protection	See Other protection below
Other protection	<p>All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers.</p> <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C.

Respiratory protection

Full face respirator with supplied air.

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

For spraying or operations which might generate aerosols:

Full face respirator with supplied air.

- ▶ In certain circumstances, personal protection of the individual employee is necessary. Personal protective devices should be regarded as being supplementary to substitution and engineering control and should not be used in preference to them as they do nothing to eliminate the hazard.
- ▶ However, in some situations, minimising exposure to isocyanates by enclosure and ventilation is not possible, and occupational exposure standards may be exceeded, particularly during on-site mixing of paints, spray-painting, foaming and maintenance of machine and ventilation systems. In these situations, air-line respirators or self-contained breathing apparatus complying with the appropriate national standard must be used.
- ▶ **Organic vapour respirators with particulate pre-filters and powered, air-purifying respirators are NOT suitable.**
- ▶ Personal protective equipment must be appropriately selected, individually fitted and workers trained in their correct use and maintenance. Personal protective equipment must be regularly checked and maintained to ensure that the worker is being protected.
- ▶ Air-line respirators or self-contained breathing apparatus complying with the appropriate national standard should be used during the clean-up of spills and the repair or clean-up of contaminated equipment and similar situations which cause emergency exposures to hazardous atmospheric concentrations of isocyanate.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available

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Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
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Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available



SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects; these may be fatal.</p> <p>The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.</p> <p>The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia.</p>
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Skin Contact	<p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p>
Eye	This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.
Chronic	<p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. [CCTRADE-Bayer, APMF]</p> <p>Animal testing shows that polymeric MDI can damage the nasal cavities and lungs, causing inflammation and increased cell growth.</p> <p>This product contains a polymer with a functional group considered to be of high concern. Isothiocyanates may cause hypersensitivity of the skin and airways.</p> <p>CONTAINS free organic isocyanate. Mixing and application requires special precautions and use of personal protective gear [APMF]</p>

Poly 1501 B Satin/Matte	TOXICITY	IRRITATION
	Not Available	Not Available
hexamethylene diisocyanate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: =570 mg/kg ^[2]	Eye: adverse effect observed (irritating) ^[1]
	Inhalation (rat) LC50: 0.06 mg/l/4h ^[2]	Skin: adverse effect observed (corrosive) ^[1]
	Oral (rat) LD50: =710 mg/kg ^[2]	Skin: adverse effect observed (irritating) ^[1]

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hexamethylene diisocyanate polymer	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Skin (rabbit): 500 mg - moderate
	Inhalation (rat) LC50: 4.625 mg/l/1h ^[2]	
	Oral (rat) LD50: approximately 2000 mg/kg ^[1]	
hexamethylene isocyanate blocked polymer	TOXICITY	IRRITATION
	Not Available	Not Available
tridecyl alcohol, ethoxylated, phosphated	TOXICITY	IRRITATION
	Not Available	Not Available
isophorone diisocyanate homopolymer	TOXICITY	IRRITATION
	Not Available	Not Available
n-butyl acetate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 3200 mg/kg ^[2]	Eye (human): 300 mg
	Inhalation (rat) LC50: 1.802 mg/l/4 h ^[1]	Eye (rabbit): 20 mg (open)-SEVERE
	Oral (rat) LD50: =10700 mg/kg ^[2]	Eye (rabbit): 20 mg/24h - moderate
		Eye: no adverse effect observed (not irritating) ^[1]
		Skin (rabbit): 500 mg/24h-moderate
dipropylene glycol monomethyl ether	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 9500 mg/kg ^[2]	Eye (human): 8 mg - mild
	Oral (rat) LD50: 5130 mg/kg ^[2]	Eye (rabbit): 500 mg/24hr - mild
		Skin (rabbit): 238 mg - mild
		Skin (rabbit): 500 mg (open)-mild

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

HEXAMETHYLENE DIISOCYANATE	For 1,6-hexamethylene diisocyanate (HDI): Exposures to HDI are often associated with exposures to its prepolymers, one of which is widely used as a hardener in automobile and airplane paints. Both the prepolymers and the native substance may cause asthma. Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect.
HEXAMETHYLENE DIISOCYANATE POLYMER	* Bayer SDS ** Ardex SDS The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
HEXAMETHYLENE ISOCYANATE BLOCKED POLYMER	SDS Ardex 6 P Part B Crosslinker Ardex Engineered Cements
TRIDECYL ALCOHOL, ETHOXYLATED, PHOSPHATED	For alkyl alcohol alkoxyphosphate (AAAPD) surfactants (alkyl or alcohol ether phosphates): Acute toxicity: This group of surfactants exhibit similar effects to the alcohol ether sulfates (AAASDs, such as sodium lauryl ether sulfate). They are likely to be irritating to the skin and eyes (R36/R38) in their undiluted forms, but not acutely toxic.
N-BUTYL ACETATE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
DIPROPYLENE GLYCOL MONOMETHYL ETHER	For propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA) and tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
Poly 1501 B Satin/Matte & HEXAMETHYLENE DIISOCYANATE & HEXAMETHYLENE DIISOCYANATE POLYMER	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.

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**Poly 1501 B Satin/Matte &
HEXAMETHYLENE
DIISOCYANATE &
HEXAMETHYLENE
DIISOCYANATE POLYMER &
HEXAMETHYLENE
ISOCYANATE BLOCKED**

The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.

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POLYMER & ISOPHORONE DIISOCYANATE HOMOPOLYMER	
HEXAMETHYLENE DIISOCYANATE & TRIDECYL ALCOHOL, ETHOXYLATED, PHOSPHATED & DIPROPYLENE GLYCOL MONOMETHYL ETHER	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound.
HEXAMETHYLENE DIISOCYANATE & TRIDECYL ALCOHOL, ETHOXYLATED, PHOSPHATED	No significant acute toxicological data identified in literature search.
HEXAMETHYLENE DIISOCYANATE POLYMER & N-BUTYL ACETATE & DIPROPYLENE GLYCOL MONOMETHYL ETHER	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Poly 1501 B Satin/Matte	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
hexamethylene diisocyanate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	22mg/L	1
	EC50	72	Algae or other aquatic plants	>77.4mg/L	2
	NOEC	72	Algae or other aquatic plants	4.9mg/L	2
hexamethylene diisocyanate polymer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	8.9mg/L	2
	EC50	48	Crustacea	127mg/L	2
	EC50	72	Algae or other aquatic plants	>1-mg/L	2
	EC0	24	Crustacea	>=1-mg/L	2
hexamethylene isocyanate blocked polymer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available	
tridecyl alcohol, ethoxylated, phosphated	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available	
isophorone diisocyanate homopolymer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available	
n-butyl acetate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	18mg/L	4
	EC50	48	Crustacea	=32mg/L	1
	EC50	96	Algae or other aquatic plants	1.675mg/L	3
	EC90	72	Algae or other aquatic plants	1-540.7mg/L	2
	NOEC	504	Crustacea	23.2mg/L	2

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dipropylene glycol monomethyl ether	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>1-930mg/L	2
	EC50	48	Crustacea	1-930mg/L	2
	EC50	72	Algae or other aquatic plants	6-999mg/L	2
	NOEC	528	Crustacea	>=0.5mg/L	2

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

for polyisocyanates:

Polyisocyanates are not readily biodegradable. However, due to other elimination mechanisms (hydrolysis, adsorption), long retention times in water are not to be expected.

For Isocyanate Monomers:

Environmental Fate: Isocyanates, (di- and polyfunctional isocyanates), are commonly used to make various polymers, such as polyurethanes. Polyurethanes find significant application in the manufacture of rigid and flexible foams.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
hexamethylene diisocyanate	LOW	LOW
hexamethylene diisocyanate polymer	HIGH	HIGH
isophorone diisocyanate homopolymer	HIGH	HIGH
n-butyl acetate	LOW	LOW
dipropylene glycol monomethyl ether	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
hexamethylene diisocyanate	LOW (LogKOW = 3.1956)
hexamethylene diisocyanate polymer	LOW (LogKOW = 7.5795)
isophorone diisocyanate homopolymer	MEDIUM (LogKOW = 4.2608)
n-butyl acetate	LOW (BCF = 14)
dipropylene glycol monomethyl ether	LOW (BCF = 100)

Mobility in soil

Ingredient	Mobility
hexamethylene diisocyanate	LOW (KOC = 5864)
hexamethylene diisocyanate polymer	LOW (KOC = 18560000)
isophorone diisocyanate homopolymer	LOW (KOC = 19770)
n-butyl acetate	LOW (KOC = 20.86)
dipropylene glycol monomethyl ether	LOW (KOC = 10)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ DO NOT recycle spilled material. ▶ Consult State Land Waste Management Authority for disposal.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Continued...

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Marine Pollutant | NO

**Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS****Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS****Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS****Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****HEXAMETHYLENE DIISOCYANATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US Clean Air Act - Hazardous Air Pollutants
IMO IBC Code Chapter 17: Summary of minimum requirements	US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	
International Air Transport Association (IATA) Dangerous Goods Regulations	US Department of Transportation (DOT), Hazardous Material Table
International Maritime Dangerous Goods Requirements (IMDG Code)	US DOE Temporary Emergency Exposure Limits (TEELs)
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US EPCRA Section 313 Chemical List
US - California Permissible Exposure Limits for Chemical Contaminants	US NIOSH Recommended Exposure Limits (RELs)
US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
US - Oregon Permissible Exposure Limits (Z-1)	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US - Oregon Permissible Exposure Limits (Z-2)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US ACGIH Threshold Limit Values (TLV)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US AIHA Workplace Environmental Exposure Levels (WEELs)	US TSCA New Chemical Exposure Limits (NCEL)
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)	US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements
	US TSCA Section 4/12 (b) - Sunset Dates/Status

HEXAMETHYLENE DIISOCYANATE POLYMER IS FOUND ON THE FOLLOWING REGULATORY LISTS

US DOE Temporary Emergency Exposure Limits (TEELs)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US EPCRA Section 313 Chemical List	US TSCA New Chemical Exposure Limits (NCEL)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory	US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements

HEXAMETHYLENE ISOCYANATE BLOCKED POLYMER IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Air Transport Association (IATA) Dangerous Goods Regulations	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
International Maritime Dangerous Goods Requirements (IMDG Code)	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US Department of Transportation (DOT), Hazardous Material Table	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

TRIDECYL ALCOHOL, ETHOXYLATED, PHOSPHATED IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

ISOPHORONE DIISOCYANATE HOMOPOLYMER IS FOUND ON THE FOLLOWING REGULATORY LISTS

US DOE Temporary Emergency Exposure Limits (TEELs)	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
US EPCRA Section 313 Chemical List	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

N-BUTYL ACETATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

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GESAMP/EHS Composite List - GESAMP Hazard Profiles	US ACGIH Threshold Limit Values (Spanish)
IMO IBC Code Chapter 17: Summary of minimum requirements	US ACGIH Threshold Limit Values (TLV)
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US AIHA Workplace Environmental Exposure Levels (WEELs)
International Air Transport Association (IATA) Dangerous Goods Regulations	US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements
International Maritime Dangerous Goods Requirements (IMDG Code)	US CWA (Clean Water Act) - List of Hazardous Substances
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides
US - Alaska Limits for Air Contaminants	US Department of Transportation (DOT), Hazardous Material Table
US - California Permissible Exposure Limits for Chemical Contaminants	US DOE Temporary Emergency Exposure Limits (TEELs)
US - Hawaii Air Contaminant Limits	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
US - Idaho - Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELS)
US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US NIOSH Recommended Exposure Limits (RELS) (Spanish)
US - Michigan Exposure Limits for Air Contaminants	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Oregon Permissible Exposure Limits (Z-1)	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US - Washington Permissible exposure limits of air contaminants	US TSCA Section 4/12 (b) - Sunset Dates/Status
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	

DIPROPYLENE GLYCOL MONOMETHYL ETHER IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
IMO IBC Code Chapter 17: Summary of minimum requirements	US ACGIH Threshold Limit Values (Spanish)
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US ACGIH Threshold Limit Values (TLV)
IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO	US AIHA Workplace Environmental Exposure Levels (WEELs)
US - Alaska Limits for Air Contaminants	US Chemical Footprint Project - Chemicals of High Concern List
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)	US Clean Air Act - Hazardous Air Pollutants
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US DOE Temporary Emergency Exposure Limits (TEELs)
US - California Permissible Exposure Limits for Chemical Contaminants	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
US - Hawaii Air Contaminant Limits	US EPCRA Section 313 Chemical List
US - Idaho - Limits for Air Contaminants	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US NIOSH Recommended Exposure Limits (RELS)
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELS) (Spanish)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US TSCA Section 4/12 (b) - Sunset Dates/Status
US - Washington Permissible exposure limits of air contaminants	

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	Yes
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No

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Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No



US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Butyl acetate	5000	2270

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (n-butyl acetate; hexamethylene isocyanate blocked polymer; tridecyl alcohol, ethoxylated, phosphated; isophorone diisocyanate homopolymer; dipropylene glycol monomethyl ether; hexamethylene diisocyanate)
China - IECSC	No (hexamethylene isocyanate blocked polymer)
Europe - EINEC / ELINCS / NLP	No (hexamethylene isocyanate blocked polymer; tridecyl alcohol, ethoxylated, phosphated)
Japan - ENCS	No (hexamethylene diisocyanate polymer; hexamethylene isocyanate blocked polymer; tridecyl alcohol, ethoxylated, phosphated; isophorone diisocyanate homopolymer)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (hexamethylene diisocyanate polymer; hexamethylene isocyanate blocked polymer; tridecyl alcohol, ethoxylated, phosphated; isophorone diisocyanate homopolymer)
Vietnam - NCI	Yes
Russia - ARIPS	No (hexamethylene isocyanate blocked polymer; isophorone diisocyanate homopolymer)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	09/04/2019
Initial Date	08/26/2019

CONTACT POINT

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

SDS Version Summary

Version	Issue Date	Sections Updated
2.3.1.1.1	09/04/2019	Ingredients, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index

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