



## Poly 600 'B'

### ICP Construction, Inc.

Version No: 2.3

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

Issue Date: 01/05/2024

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S.GHS.USA.EN

#### SECTION 1 Identification

##### Product Identifier

Product name	Poly 600 'B'
Synonyms	Not Available
Proper shipping name	Resin Solution, flammable
Other means of identification	Not Available

##### Recommended use of the chemical and restrictions on use

Relevant identified uses	Floor Coating
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##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	ICP Construction, Inc.
Address	150 Dascomb Road Andover MA 01810 United States
Telephone	1-866-667-5199 1-978-623-9987
Fax	Not Available
Website	<a href="http://www.icpgroup.com">www.icpgroup.com</a>
Email	sds@icpgroup.com

##### Emergency phone number

Association / Organisation	Chemtel
Emergency telephone numbers	1-800-225-3924
Other emergency telephone numbers	1-813-248-0585

#### 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	Flammable Liquids Category 3, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Inhalation) Category 4, Sensitisation (Respiratory) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term 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)

H226	Flammable liquid and vapour.
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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P271	Use only outdoors or in a well-ventilated area.
P284	[In case of inadequate ventilation] wear respiratory protection.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

**Precautionary statement(s) Response**

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

**Precautionary statement(s) Storage**

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
28182-81-2	45-70	<u>hexamethylene diisocyanate polymer</u>
666723-27-9	5-30	<u>N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked</u>
822-06-0	0.1-1	<u>hexamethylene diisocyanate</u>
98-94-2	0.5-1.5	<u>N,N-dimethylcyclohexylamine</u>
53880-05-0	5-10	<u>isophorone diisocyanate homopolymer</u>
123-86-4	1-5	<u>n-butyl acetate</u>
9046-01-9	1-5	<u>tridecanol ethoxylated phosphated</u>
4098-71-9	0.1-1	<u>isophorone diisocyanate</u>

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## Poly 600 'B'

CAS No	%[weight]	Name
88917-22-0*	5-10	dipropylene glycol monomethyl ether acetate

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

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Quickly but gently, wipe material off skin with a dry, clean cloth.</li> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul> <p>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.</p>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li> <li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> <ul style="list-style-type: none"> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

### Most important symptoms and effects, both acute and delayed

See Section 11

### Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

for simple esters:

#### BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema .
- ▶ Monitor and treat, where necessary, for shock.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Give activated charcoal.

#### ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

#### EMERGENCY DEPARTMENT

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- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. *EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994*

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.
- ▶ Cooling with flooding quantities of water reduces this risk.
- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).

#### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ 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

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Liquid and vapour are flammable.</li> <li>▶ Moderate fire hazard when exposed to heat or flame.</li> <li>▶ Vapour forms an explosive mixture with air.</li> </ul> <p>Combustion products include: carbon dioxide (CO<sub>2</sub>) carbon monoxide (CO) isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NO<sub>x</sub>) sulfur oxides (SO<sub>x</sub>) other pyrolysis products typical of burning organic material.</p> <p>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> <ul style="list-style-type: none"> <li>▶ Burns with acrid black smoke.</li> </ul>

### 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

<b>Minor Spills</b>	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> </ul>
<b>Major Spills</b>	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> <li>▶ Liquid Isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur.</li> </ul>

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	<p>For isocyanate spills of less than 40 litres (2 m<sup>2</sup>):</p> <ul style="list-style-type: none"> <li>▶ Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.</li> <li>▶ Notify supervision and others as necessary.</li> <li>▶ Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).</li> <li>▶ Avoid contamination with water, alkalies and detergent solutions.</li> <li>▶ Material reacts with water and generates gas, pressurises containers with even drum rupture resulting.</li> <li>▶ <b>DO NOT reseal container if contamination is suspected.</b></li> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> </ul>
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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

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Containers, even those that have been emptied, may contain explosive vapours.</li> <li>▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of overexposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Other information</b>	<p>Consider storage under inert gas.</p> <ul style="list-style-type: none"> <li>▶ Store in original containers in approved flammable liquid storage area.</li> <li>▶ Store away from incompatible materials in a cool, dry, well-ventilated area.</li> <li>▶ <b>DO NOT store in pits, depressions, basements or areas where vapours may be trapped.</b></li> </ul> <p>for commercial quantities of isocyanates:</p> <ul style="list-style-type: none"> <li>· Isocyanates should be stored in adequately banded areas. Nothing else should be kept within the same bunding. Pre-polymers need not be segregated.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Packing as supplied by manufacturer.</li> <li>▶ Plastic containers may only be used if approved for flammable liquid.</li> <li>▶ Check that containers are clearly labelled and free from leaks.</li> <li>▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> <li>▶ For materials with a viscosity of at least 2680 cSt.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Esters react with acids to liberate heat along with alcohols and acids.</li> <li>▶ Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.</li> <li>▶ Heat is also generated by the interaction of esters with caustic solutions.</li> <li>· 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. Upon treatment with an alcohol, an isocyanate forms a urethane linkage.</li> <li>▶ A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.</li> <li>▶ 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.</li> <li>▶ For example, in 'open vessel processes' (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in 'closed vessel processes' (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.</li> </ul>

## 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	Hexamethylene diisocyanate	0.005 ppm / 0.035 mg/m <sup>3</sup>	Not Available	0.020 (10-minute) ppm / 0.140 (10-minute) mg/m <sup>3</sup>	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	n-butyl acetate	n-Butyl-acetate	150 ppm / 710 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	n-butyl acetate	n-Butyl acetate	150 ppm / 710 mg/m <sup>3</sup>	950 mg/m <sup>3</sup> / 200 ppm	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	isophorone diisocyanate	Isophorone diisocyanate	0.005 ppm / 0.045 mg/m <sup>3</sup>	0.180 mg/m <sup>3</sup> / 0.02 ppm	Not Available	[skin]

#### Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
hexamethylene diisocyanate polymer	7.8 mg/m <sup>3</sup>	86 mg/m <sup>3</sup>	510 mg/m <sup>3</sup>
hexamethylene diisocyanate	0.018 ppm	0.2 ppm	3 ppm
N,N-dimethylcyclohexylamine	1 mg/m <sup>3</sup>	11 mg/m <sup>3</sup>	66 mg/m <sup>3</sup>
n-butyl acetate	Not Available	Not Available	Not Available

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Ingredient	TEEL-1	TEEL-2	TEEL-3
isophorone diisocyanate	0.02 ppm	0.14 ppm	0.6 ppm

Ingredient	Original IDLH	Revised IDLH
hexamethylene diisocyanate polymer	Not Available	Not Available
N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked	Not Available	Not Available
hexamethylene diisocyanate	Not Available	Not Available
N,N-dimethylcyclohexylamine	Not Available	Not Available
isophorone diisocyanate homopolymer	Not Available	Not Available
n-butyl acetate	1,700 ppm	Not Available
tridecanol ethoxylated, phosphated	Not Available	Not Available
isophorone diisocyanate	Not Available	Not Available
dipropylene glycol monomethyl ether acetate	Not Available	Not Available

## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
hexamethylene diisocyanate polymer	E	≤ 0.1 ppm
N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked	E	≤ 0.1 ppm
N,N-dimethylcyclohexylamine	E	≤ 0.1 ppm
isophorone diisocyanate homopolymer	D	> 0.1 to ≤ 1 ppm
<b>Notes:</b>	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

## Exposure controls

<b>Appropriate engineering controls</b>	<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> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <ul style="list-style-type: none"> <li>▶ All processes in which isocyanates are used should be enclosed wherever possible.</li> <li>▶ Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards.</li> <li>▶ If total enclosure of the process is not feasible, local exhaust ventilation may be necessary.</li> </ul>
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ 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.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>For esters:</p> <ul style="list-style-type: none"> <li>▶ Do NOT use natural rubber, butyl rubber, EPDM or polystyrene-containing materials.</li> </ul> <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> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <ul style="list-style-type: none"> <li>▶ Do NOT wear natural rubber (latex gloves).</li> <li>▶ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.</li> <li>▶ Protective gloves and overalls should be worn as specified in the appropriate national standard.</li> <li>▶ Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.</li> <li>▶ <b>DO NOT use skin cream unless necessary and then use only minimum amount.</b></li> <li>▶ Isocyanate vapour may be absorbed into skin cream and this increases hazard.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	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

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produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential.

- ▶ Overalls.
- ▶ PVC Apron.
- ▶ PVC protective suit may be required if exposure severe.
- ▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- ▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).
- ▶ Non sparking safety or conductive footwear should be considered.

**Respiratory protection**

Type AK Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- ▶ 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**

<b>Appearance</b>	Moisture sensitive.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	9.29 lbs/gal
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	>40	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Flammable.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Available	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	39 when mixed as intended

**SECTION 10 Stability and reactivity**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7

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<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

**SECTION 11 Toxicological information****Information on toxicological effects**

<b>Inhaled</b>	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. There is strong evidence to suggest that this material can cause, if inhaled once, serious, irreversible damage of organs. The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioural changes may occur.</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. Gastrointestinal disturbances are characterised by nausea and vomiting.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.</p>
<b>Ingestion</b>	<p>Strong evidence exists that exposure to the material may cause irreversible damage (other than cancer, mutations and birth defects) following a single exposure by swallowing.</p> <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> <p>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.</p>
<b>Skin Contact</b>	<p>There is strong evidence to suggest that this material, on a single contact with skin, can cause serious, irreversible damage of organs. 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>
<b>Eye</b>	If applied to the eyes, this material causes severe eye damage.
<b>Chronic</b>	<p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. 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>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Some glycol esters and their ethers cause wasting of the testicles, reproductive changes, infertility and changes to kidney function. Shorter chain compounds are more dangerous.</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>The polymer this material contains and its functional group is of low concern. Blocked isocyanates have a group attached to them to reduce their reactivity compared to the unblocked version which is much more reactive.</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.</p> <p>The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components.</p> <p>Animal testing shows that polymeric MDI can damage the nasal cavities and lungs, causing inflammation and increased cell growth.</p> <p>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.</p> <p><b>CONTAINS</b> free organic isocyanate. Mixing and application requires special precautions and use of personal protective gear [APMF]</p>

<b>Poly 600 'B'</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>hexamethylene diisocyanate polymer</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (rabbit): 500 mg - moderate
	Inhalation(Rat) LC50: 0.052-0.5 mg/L4h <sup>[1]</sup>	
	Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>	
<b>N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation(Rat) LC50: 0.158 mg/L4h <sup>[2]</sup>	Not Available
	Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>	
<b>hexamethylene diisocyanate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 593 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: 0.06 mg/L4h <sup>[2]</sup>	Skin: adverse effect observed (corrosive) <sup>[1]</sup>



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	Oral (Mouse) LD50; 350 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
<b>N,N-dimethylcyclohexylamine</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 210 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: 4.45 mg/L4h <sup>[2]</sup>	Skin: adverse effect observed (corrosive) <sup>[1]</sup>
	Oral (Mouse) LD50; 320 mg/kg <sup>[2]</sup>	
<b>isophorone diisocyanate homopolymer</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation(Rat) LC50: 3.538 mg/L4h <sup>[1]</sup>	Not Available
	Oral (Rat) LD50: 5000 mg/kg <sup>[1]</sup>	
<b>n-butyl acetate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 3200 mg/kg <sup>[2]</sup>	Eye ( human): 300 mg * [PPG]
	Inhalation(Rat) LC50: 0.74 mg/L4h <sup>[2]</sup>	Eye (rabbit): 20 mg (open)-SEVERE
	Oral (Rabbit) LD50; 3200 mg/kg <sup>[2]</sup>	Eye (rabbit): 20 mg/24h - moderate
		Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
		Skin (rabbit): 500 mg/24h-moderate
	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>	
<b>tridecanol ethoxylated, phosphated</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Rat) LD50: >2000 mg/kg <sup>[2]</sup>	Not Available
<b>isophorone diisocyanate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >=2000 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: 0.031 mg/L4h <sup>[1]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (Rat) LD50: >=2000 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>dipropylene glycol monomethyl ether acetate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Not Available
	Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>	
<b>Legend:</b>	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	

<b>HEXAMETHYLENE DIISOCYANATE POLYMER</b>	* Bayer SDS ** Ardex SDS
<b>N,N-DIMETHYLCYCLOHEXYLAMINE/ CAPS/ HEXAMETHYLENE DIISOCYANATE BLOCKED</b>	SDS Ardex 6 P Part B Crosslinker Ardex Engineered Cements
<b>HEXAMETHYLENE DIISOCYANATE</b>	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. HDI is corrosive to the skin and eye, and will sensitise the skin and airway.
<b>N,N-DIMETHYLCYCLOHEXYLAMINE</b>	Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.
<b>N-BUTYL ACETATE</b>	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
<b>TRIDECANOL ETHOXYLATED, PHOSPHATED</b>	Stephan SDS For alkyl alcohol alkoxyate phosphate (AAPD) 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. Commercial products may contain excess phosphoric acid and may produce serious eye irritation (R41) or may even be classified as corrosive, acidic substances. Subchronic toxicity: Animal testing shows that these substances have relatively low chronic toxicity. For acid mists, aerosols, vapours Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract

## Poly 600 'B'

	<p>have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there).</p> <p>Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products.</p> <p>Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitizers. The oxidation products also cause irritation.</p>
dipropylene glycol monomethyl ether acetate	<p>For propylene glycol ethers (PGEs):</p> <p>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).</p> <p>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 common toxicities associated with the lower molecular weight homologues of the ethylene series, such as adverse effects on the reproductive organs, the developing embryo and foetus, blood or thymus gland, are not seen with the commercial-grade propylene glycol ethers. In the ethylene series, metabolism of the terminal hydroxyl group produces and alkoxyacetic acid.</p>
Poly 600 'B' & N,N-DIMETHYLCYCLOHEXYLAMINE/ CAPS/ HEXAMETHYLENE DIISOCYANATE BLOCKED & HEXAMETHYLENE DIISOCYANATE & N,N-DIMETHYLCYCLOHEXYLAMINE & TRIDECANOL ETHOXYLATED, PHOSPHATED & ISOPHORONE DIISOCYANATE & dipropylene glycol monomethyl ether acetate	<p>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. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.</p>
Poly 600 'B' & HEXAMETHYLENE DIISOCYANATE POLYMER & N,N-DIMETHYLCYCLOHEXYLAMINE/ CAPS/ HEXAMETHYLENE DIISOCYANATE BLOCKED & HEXAMETHYLENE DIISOCYANATE & ISOPHORONE DIISOCYANATE	<p>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. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms.</p> <p>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.</p>
Poly 600 'B' & HEXAMETHYLENE DIISOCYANATE POLYMER & N,N-DIMETHYLCYCLOHEXYLAMINE/ CAPS/ HEXAMETHYLENE DIISOCYANATE BLOCKED & HEXAMETHYLENE DIISOCYANATE & ISOPHORONE DIISOCYANATE HOMOPOLYMER & ISOPHORONE DIISOCYANATE	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.</p> <p>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.</p>
Poly 600 'B' & N-BUTYL ACETATE	<p>Generally, linear and branched-chain alkyl esters are hydrolysed to their component alcohols and carboxylic acids in the intestinal tract, blood and most tissues throughout the body. Following hydrolysis the component alcohols and carboxylic acids are metabolized</p> <p>Oral acute toxicity studies have been reported for 51 of the 67 esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids. The very low oral acute toxicity of this group of esters is demonstrated by oral LD50 values greater than 1850 mg/kg bw</p> <p>Genotoxicity studies have been performed in vitro using the following esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids: methyl acetate, butyl acetate, butyl stearate and the structurally related isoamyl formate and demonstrates that these substances are not genotoxic.</p> <p>The JEFCA Committee concluded that the substances in this group would not present safety concerns at the current levels of intake the esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids are generally used as flavouring substances up to average maximum levels of 200 mg/kg.</p>
HEXAMETHYLENE DIISOCYANATE POLYMER & N,N-DIMETHYLCYCLOHEXYLAMINE/ CAPS/ HEXAMETHYLENE DIISOCYANATE BLOCKED & HEXAMETHYLENE DIISOCYANATE & ISOPHORONE DIISOCYANATE HOMOPOLYMER	<p>No significant acute toxicological data identified in literature search.</p>
HEXAMETHYLENE DIISOCYANATE POLYMER & N,N-DIMETHYLCYCLOHEXYLAMINE	<p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
HEXAMETHYLENE DIISOCYANATE POLYMER & N,N-DIMETHYLCYCLOHEXYLAMINE & N-BUTYL ACETATE	<p>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.</p>
HEXAMETHYLENE DIISOCYANATE & ISOPHORONE DIISOCYANATE	<p>Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome.</p>

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

Continued...

## Poly 600 'B'

## Toxicity

Poly 600 'B'	Endpoint	Test Duration (hr)	Species	Value	Source
		Not Available	Not Available	Not Available	Not Available

hexamethylene diisocyanate polymer	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>1000mg/l	Not Available
	EC50	48h	Crustacea	>100mg/l	Not Available
	LC50	96h	Fish	>100mg/l	Not Available
	EC50(ECx)	48h	Crustacea	>100mg/l	Not Available

N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	72mg/l	Not Available
	EC50	48h	Crustacea	>100mg/l	Not Available
	LC50	96h	Fish	35.2mg/l	Not Available
	EC50(ECx)	72h	Algae or other aquatic plants	72mg/l	Not Available

hexamethylene diisocyanate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>77.4mg/l	2
	EC0(ECx)	24h	Crustacea	<0.33mg/l	1
	LC50	96h	Fish	22mg/l	1

N,N-dimethylcyclohexylamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	0.309mg/l	1
	EC50	96h	Algae or other aquatic plants	0.0885mg/l	1
	EC50	48h	Crustacea	75mg/l	1
	EC20(ECx)	96h	Algae or other aquatic plants	0.0305mg/l	1
	LC50	96h	Fish	22mg/l	1

isophorone diisocyanate homopolymer	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	>1.51mg/l	2
	EC50	72h	Algae or other aquatic plants	>3.1 mg/l	2
	EC50	48h	Crustacea	>3.36mg/l	2
	NOEC(ECx)	816h	Fish	>=0.033mg/l	2

n-butyl acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	246mg/l	2
	EC50	48h	Crustacea	32mg/l	1
	LC50	96h	Fish	17-19mg/l	4
	EC50(ECx)	96h	Fish	18mg/l	2

tridecanol ethoxylated, phosphated	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

isophorone diisocyanate	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	96h	Crustacea	0.56mg/l	1
	LC50	96h	Fish	>72mg/l	2
	EC50	72h	Algae or other aquatic plants	>70mg/l	2
	EC50	48h	Crustacea	27mg/l	2
	EC50	72h	Algae or other aquatic plants	>70mg/l	2

dipropylene glycol monomethyl ether acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	1090mg/l	2
	NOEC(ECx)	96h	Fish	62.5mg/l	2
	LC50	96h	Fish	110.55mg/l	2

Continued...

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<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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
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On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Harmful to aquatic organisms.

For Propylene Glycol Ethers: log Kow's range from 0.309 for TPM to 1.523 for DPnB. Calculated BCFs range from 1.47 for DPnB to 3.16 for DPMA and TPM, indicating low bioaccumulation. Henry's Law Constants are low for all category members, ranging from  $5.7 \times 10^{-9}$  atm-m<sup>3</sup>/mole for TPM to  $2.7 \times 10^{-9}$  atm-m<sup>3</sup>/mole for PnB.

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. The resulting polyurea is more or less inert and, due to its molecular size, not bioavailable.

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. They are also used in the production of adhesives, elastomers, and coatings.

**DO NOT discharge into sewer or waterways.**

## Persistence and degradability

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

## Bioaccumulative potential

Ingredient	Bioaccumulation
hexamethylene diisocyanate polymer	LOW (LogKOW = 7.5795)
hexamethylene diisocyanate	LOW (LogKOW = 3.1956)
N,N-dimethylcyclohexylamine	LOW (LogKOW = 2.3082)
isophorone diisocyanate homopolymer	MEDIUM (LogKOW = 4.2608)
n-butyl acetate	LOW (BCF = 14)
isophorone diisocyanate	HIGH (LogKOW = 4.7519)
dipropylene glycol monomethyl ether acetate	LOW (LogKOW = 0.6595)

## Mobility in soil

Ingredient	Mobility
hexamethylene diisocyanate polymer	LOW (KOC = 18560000)
hexamethylene diisocyanate	LOW (KOC = 5864)
N,N-dimethylcyclohexylamine	LOW (KOC = 69.49)
isophorone diisocyanate homopolymer	LOW (KOC = 19770)
n-butyl acetate	LOW (KOC = 20.86)
isophorone diisocyanate	LOW (KOC = 36450)
dipropylene glycol monomethyl ether acetate	LOW (KOC = 10)

## SECTION 13 Disposal considerations

## Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> </ul>
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## Poly 600 'B'

- ▶ Recycle wherever possible.
- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).

## SECTION 14 Transport information

## Labels Required

	
<b>Marine Pollutant</b>	NO

Shipping container and transport vehicle placarding and labeling may vary from the below information. Products that are regulated for transport will be packaged and marked as Dangerous Goods in Limited Quantities according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

## Land transport (DOT)

14.1. UN number or ID number	1866	
14.2. UN proper shipping name	Resin Solution, flammable	
14.3. Transport hazard class(es)	Class	3
	Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard Label	3
	Special provisions	B1, B52, IB3, T2, TP1

## Air transport (ICAO-IATA / DGR)

14.1. UN number	1866	
14.2. UN proper shipping name	Resin solution flammable	
14.3. Transport hazard class(es)	ICAO/IATA Class	3
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	3L
14.4. Packing group	III	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	366
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	355
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y344
	Passenger and Cargo Limited Maximum Qty / Pack	10 L

## Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1866	
14.2. UN proper shipping name	RESIN SOLUTION flammable	
14.3. Transport hazard class(es)	IMDG Class	3
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-E , S-E
	Special provisions	223 955
	Limited Quantities	5 L

## Poly 600 'B'

**14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
hexamethylene diisocyanate polymer	Not Available
N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked	Not Available
hexamethylene diisocyanate	Not Available
N,N-dimethylcyclohexylamine	Not Available
isophorone diisocyanate homopolymer	Not Available
n-butyl acetate	Not Available
tridecanol ethoxylated, phosphated	Not Available
isophorone diisocyanate	Not Available
dipropylene glycol monomethyl ether acetate	Not Available

**14.7.3. Transport in bulk in accordance with the IGC Code**

Product name	Ship Type
hexamethylene diisocyanate polymer	Not Available
N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked	Not Available
hexamethylene diisocyanate	Not Available
N,N-dimethylcyclohexylamine	Not Available
isophorone diisocyanate homopolymer	Not Available
n-butyl acetate	Not Available
tridecanol ethoxylated, phosphated	Not Available
isophorone diisocyanate	Not Available
dipropylene glycol monomethyl ether acetate	Not Available

**SECTION 15 Regulatory information****Safety, health and environmental regulations / legislation specific for the substance or mixture****hexamethylene diisocyanate polymer is found on the following regulatory lists**

US DOE Temporary Emergency Exposure Limits (TEELs)  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  
 US TSCA New Chemical Exposure Limits (NCEL)

**N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**hexamethylene diisocyanate is found on the following regulatory lists**

US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants  
 US - Massachusetts - Right To Know Listed Chemicals  
 US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)  
 US Clean Air Act - Hazardous Air Pollutants  
 US DOE Temporary Emergency Exposure Limits (TEELs)  
 US EPA Integrated Risk Information System (IRIS)  
 US EPCRA Section 313 Chemical List  
 US NIOSH Recommended Exposure Limits (RELs)  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  
 US TSCA New Chemical Exposure Limits (NCEL)  
 US TSCA Section 4/12 (b) - Sunset Dates/Status

**N,N-dimethylcyclohexylamine is found on the following regulatory lists**

US DOE Temporary Emergency Exposure Limits (TEELs)  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**isophorone diisocyanate homopolymer is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**n-butyl acetate is found on the following regulatory lists**

Continued...

## Poly 600 'B'

US - Massachusetts - Right To Know Listed Chemicals  
 US CWA (Clean Water Act) - List of Hazardous Substances  
 US DOE Temporary Emergency Exposure Limits (TEELs)  
 US NIOSH Recommended Exposure Limits (RELs)  
 US OSHA Permissible Exposure Limits (PELs) Table Z-1  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  
 US TSCA Section 4/12 (b) - Sunset Dates/Status

**tridecanol ethoxylated, phosphated is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**isophorone diisocyanate is found on the following regulatory lists**

US - Massachusetts - Right To Know Listed Chemicals  
 US DOE Temporary Emergency Exposure Limits (TEELs)  
 US EPCRA Section 313 Chemical List  
 US NIOSH Recommended Exposure Limits (RELs)  
 US SARA Section 302 Extremely Hazardous Substances  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**dipropylene glycol monomethyl ether acetate is found on the following regulatory lists**

US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants  
 US Clean Air Act - Hazardous Air Pollutants  
 US EPCRA Section 313 Chemical List  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**Additional Regulatory Information**

Not Applicable

**Federal Regulations****Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 311/312 hazard categories**

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
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
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
hexamethylene diisocyanate	100	45.4
n-butyl acetate	5000	2270

**US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)**

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

CAS No	%[weight]	Name
822-06-0	0.1-1	hexamethylene diisocyanate
4098-71-9	0.1-1	isophorone diisocyanate

This information must be included in all SDSs that are copied and distributed for this material.

Continued...

## Poly 600 'B'

CAS No	%[weight]	Name
88917-22-0*	5-10	dipropylene glycol monomethyl ether acetate

This information must be included in all SDSs that are copied and distributed for this material.

#### Additional Federal Regulatory Information

Not Applicable

#### State Regulations

##### US. California Proposition 65

**WARNING:** This product can expose you to chemicals including **hexachlorobenzene**, which is known to the State of California to cause cancer, and **hexachlorobenzene**, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

#### Additional State Regulatory Information

Not Applicable

#### National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked; hexamethylene diisocyanate; N,N-dimethylcyclohexylamine; isophorone diisocyanate homopolymer; n-butyl acetate; tridecanol ethoxylated, phosphated; isophorone diisocyanate; dipropylene glycol monomethyl ether acetate)
China - IECSC	No (N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked)
Europe - EINEC / ELINCS / NLP	No (N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked; tridecanol ethoxylated, phosphated; dipropylene glycol monomethyl ether acetate)
Japan - ENCS	No (N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked; isophorone diisocyanate homopolymer; dipropylene glycol monomethyl ether acetate)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (hexamethylene diisocyanate polymer; N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked; isophorone diisocyanate homopolymer; tridecanol ethoxylated, phosphated; dipropylene glycol monomethyl ether acetate)
Vietnam - NCI	Yes
Russia - FBEPH	No (N,N-dimethylcyclohexylamine/ CAPS/ hexamethylene diisocyanate blocked; isophorone diisocyanate homopolymer; dipropylene glycol monomethyl ether acetate)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

#### SECTION 16 Other information

<b>Revision Date</b>	01/05/2024
<b>Initial Date</b>	10/09/2023

#### CONTACT POINT

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

#### SDS Version Summary

Version	Date of Update	Sections Updated
1.3	01/05/2024	Hazards identification - Classification, Ecological Information - Environmental, Firefighting measures - Fire Fighter (fire fighting), Composition / information on ingredients - Ingredients, Accidental release measures - Spills (major), Identification of the substance / mixture and of the company / undertaking - Synonyms, Identification of the substance / mixture and of the company / undertaking - Use, 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. Risks may be determined by reference to Exposures Scenarios.

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