

ICP Construction Inc.

Version No: 2.2

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

Issue Date: 06/10/2022 Print Date: 06/10/2022 S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	Poly 100 B Clear
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 Specialty Flooring Curative

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	1-866-667-5119 1-978-623-9987
Fax	Not Available
Website	www.icpgroup.com
Email	sds@icpgroup.com

Emergency phone number

Association / Organisation	ChemTel
Emergency telephone numbers	1-800-255-3924
Other emergency telephone numbers	1-813-248-0585

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

of this S Health	he hazard category numbers found in GHS classification in section 2 DDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Red = Fire Yellow = Reactivity White = Special (Oxidizer or water e substances)
Classification	Serious Eye Damage/Eye Irritation Category 2A, Sensitisation (Respiratory) Category 1, Flammable Liquids Category 2, Acute Toxicity (Inhalation) Category 4, Sensitisation (Skin) Category 1
Label elements	
Hazard pictogram(s)	
Signal word	Danger
Hazard statement(s)	
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H317	May cause an allergic skin reaction.

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.
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the building.
P280	Wear protective gloves/protective clothing/eye protection/face protection
P284	In case of inadequate ventilation, wear respiratory protection.

Precautionary statement(s) Response

P302+P352	IF ON SKIN: Wash with plenty of water.	
P304+P340	INHALED: Remove person to fresh air and keep comfortable for breathing.	
P333+P313	IF Skin irritation or rash occurs: Get medical advice/attention.	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.	
P337+P313	IF Eye irritation persists: Get medical advice/attention.	
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.	

Precautionary statement(s) Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
28182-81-2	65-85	hexamethylene diisocyanate polymer
822-06-0	0.1-1	hexamethylene diisocyanate
78-93-3	7-13	methyl ethyl ketone

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	 If this product comes in contact with the eyes: 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	 If skin contact occurs: 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. 	
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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Poly 100 B Clear

	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	 Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

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

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	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.
Fire/Explosion Hazard	 Liquid and vapour are highly flammable. Severe fire hazard when exposed to heat, flame and/or oxidisers. Vapour may travel a considerable distance to source of ignition. Combustion products include: carbon dioxide (CO2) isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NOX) other pyrolysis products typical of burning organic material. 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

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	 Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes.
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Major Spills	 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. For isocyanate spills of less than 40 litres (2 m2): 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. Notify supervision and others as necessary. Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots). Avoid contamination with water, alkalies and detergent solutions. Material reacts with water and generates gas, pressurises containers with even drum rupture resulting. DO NOT reseal container if contamination is suspected. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive.
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Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Conditions for safe storage, including any incompatibilities

Suitable container	 Lined metal can, lined metal pail/ can. Plastic pail. Polyliner drum. For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.
Storage incompatibility	 Methyl ethyl ketone: reacts violently with strong oxidisers, aldehydes, nitric acid, perchloric acid, potassium tert-butoxide, oleum is incompatible with inorganic acids, aliphatic amines, ammonia, caustics, isocyanates, pyridines, chlorosulfonic aid forms unstable peroxides in storage, or on contact with propanol or hydrogen peroxide attacks some plastics may generate electrostatic charges, due to low conductivity, on flow or agitation 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. 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. 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.

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/m3	Not Available	0.020 (10-minute) ppm / 0.140 (10-minute) mg/m3	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	methyl ethyl ketone	2-Butanone (Methyl ethyl ketone)	200 ppm / 590 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	methyl ethyl ketone	2-Butanone	200 ppm / 590 mg/m3	885 mg/m3 / 300 ppm	Not Available	Not Available

Emergency Limits			
Ingredient	TEEL-1	TEEL-2	TEEL-3
hexamethylene diisocyanate polymer	7.8 mg/m3	86 mg/m3	510 mg/m3

Ingredient	TEEL-1	TEEL-2		TEEL-3	
hexamethylene diisocyanate	0.018 ppm	0.2 ppm		3 ppm	
methyl ethyl ketone	Not Available	Not Available		Not Available	
Ingredient	Original IDLH		Revised IDLH		
hexamethylene diisocyanate polymer	Not Available	Not Available		Not Available	
hexamethylene diisocyanate	Not Available		Not Available		
methyl ethyl ketone	3,000 ppm		Not Available		
Occupational Exposure Banding	1				
Ingredient	Occupational Exposure Band Rating		Occupational Expos	ure Band Limit	
hexamethylene diisocyanate polymer	E		≤ 0.1 ppm		
Notes:	Occupational exposure banding is a process of adverse health outcomes associated with expos range of exposure concentrations that are expe	sure. The output of this pr	ocess is an occupational		

Appropriate engineering controls	 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. If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. 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. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
Personal protection	
Eye and face protection	 Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection	See Hand protection below
Hands/feet protection	 NOTE: 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. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 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. 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. 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. Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated. 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	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. 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.

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 nationals 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	Moisture sensitive.		
Plantin Later			
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
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
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 (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
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 Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. 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 Inhaled neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Acute exposure of humans to high concentrations of methyl ethyl ketone produces irritation to the eyes, nose and throat. Acute exposure by inhalation also causes nervous system depression, headache, and nausea. High vapour levels are easily detected due to odour, however odour fatigue may occur, with loss of warning of exposure 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 Ingestion requires that exposure be kept to a minimum. 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.

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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. Long-term exposure to respiratory irritants may result in ainways 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. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. This product contains a polymer with a functional group considered to be of high concern. Isothiccyanates may cause hypersensitivity of the skin and airways. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally unit with either solvent alone. Chronic Chronic Chronic Chronic Chronic Chronic Chreaction humans, and no information is available on whether it cau	Skin Contact	The material may accentuate any pre-existing dermatitis condition Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. In humans exposed to methyl ethyl ketone, skin inflammation has been reported. Animal testing has shown methyl ethyl ketone to have high acute toxicity from skin exposure. Open cuts, abraded or irritated skin should not be exposed to this material 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. 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.
Chronic Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. This product contains a polymer with a functional group considered to be of high concern. Isothiocyanates may cause hypersensitivity of the skin and airways. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally with either solvent and one. 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. The chemistry of reaction of isocyanates, as evidenced by MDI, in biological macromolecular on 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. Animal testing shows that polymeric MDI can damage the nasal cavities and lungs, causing inflammation. and increased cell growth. Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even	Eye	
	Chronic	Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. This product contains a polymer with a functional group considered to be of high concern. Isothiocyanates may cause hypersensitivity of the skin and airways. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally considered to have low toxicity, but it is often used in combination with other solvents, and the toxic effects of the mixture may be greater than with either solvent alone. 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. The chemistry of reaction will commence at once with 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.

Poly 100 B Clear	ΤΟΧΙΟΙΤΥ	IRRIT	TATION	
Poly 100 B Clear	Not Available	Not A	vailable	
	TOXICITY		IRRITATION	
nexamethylene diisocyanate	Dermal (rabbit) LD50: >2000 mg/kg ^[1]		Skin (rabbit): 500 mg - moderate	
polymer	Inhalation(Rat) LC50; 0.052-0.5 mg/L4h ^[1]			
	Oral (Rat) LD50; >2000 mg/kg ^[1]			
	TOXICITY IRRITATION Dermal (rabbit) LD50: 593 mg/kg ^[2] Eye: adverse effect observed (irritating) ^[1]			
hexamethylene diisocyanate	Inhalation(Rat) LC50; 0.06 mg/L4h ^[2] Skin: adver		rse effect observed (corrosive) ^[1]	
	Oral (Mouse) LD50; 350 mg/kg ^[2] Skin: adverse effect observed (irritating) ^[1]			
	ΤΟΧΙΟΙΤΥ		RRITATION	
			Eye (human): 350 ppm -irritant	
methyl ethyl ketone	Inhalation(Mouse) LC50; 32 mg/L4h ^[2]		Eye (rabbit): 80 mg - irritant	
	Oral (Rat) LD50; 2054 mg/kg ^[1]		Skin (rabbit): 402 mg/24 hr - mild	
		;	Skin (rabbit):13.78mg/24 hr open	
Legend:	1. Value obtained from Europe ECHA Registered Sub specified data extracted from RTECS - Register of To		* Value obtained from manufacturer's SDS. Unless other	rwise

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 DIISOCYANATE	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. 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.

Poly 100 B Clear & HEXAMETHYLENE DIISOCYANATE & METHYL ETHYL KETONE	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.					
Poly 100 B Clear & HEXAMETHYLENE DIISOCYANATE POLYMER & HEXAMETHYLENE DIISOCYANATE	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. 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. 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. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. 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.					
Poly 100 B Clear & METHYL ETHYL KETONE	Methyl ethyl ketone is considered to have a low order of toxicity; however, methyl ethyl ketone is often used in combination with other solvents and the mixture may have greater toxicity than either solvent alone. Combinations of n-hexane with methyl ethyl ketone, and also methyl n-butyl ketone with methyl ethyl ketone may result in an increased in peripheral neuropathy, a progressive disorder of the nerves of the extremities. Combinations with chloroform also show an increase in toxicity.					
HEXAMETHYLENE DIISOCYANATE POLYMER & HEXAMETHYLENE DIISOCYANATE	No significant acute toxicological data identified in literature search.					
HEXAMETHYLENE	T I					
DIISOCYANATE POLYMER & METHYL ETHYL KETONE	vesicles, scaling and thickening of the skin.	repeated exposure and may produce	e on contact skin redness, swelling, the production of			
		repeated exposure and may produce Carcinogenicity	e on contact skin redness, swelling, the production of			
METHYL ETHYL KETONE	vesicles, scaling and thickening of the skin.					
METHYL ETHYL KETONE Acute Toxicity	vesicles, scaling and thickening of the skin.	Carcinogenicity	×			
METHYL ETHYL KETONE Acute Toxicity Skin Irritation/Corrosion	vesicles, scaling and thickening of the skin.	Carcinogenicity Reproductivity	×			

Legend:

Data either not available or does not fill the criteria for classification
 Data available to make classification

SECTION 12 Ecological information

Toxicity

Daly 100 B Clear	Endpoint Test Duration		r) Species		Value	Value		Source	
Poly 100 B Clear	Not Available	Not Available	Not Available Not Avai		Not Avail	ailable Not Availa		vailable	
	Endpoint	Test Duration (hr)	Species			Value	So	ource	
	EC50	72h	Algae or	Algae or other aquatic plants		>1000mg/l		ot Available	
kamethylene diisocyanate polymer	EC50(ECx)	48h	Crustace	a		>100mg/l	No	ot Available	
polymen	EC50	48h	Crustace	Crustacea		>100mg/l	N	ot Available	
	LC50	96h	Fish			>100mg/l	No	ot Available	
	Endpoint	Test Duration (hr)	Species		Value		Source		
	LC50	96h	Fish	Fish			/I	1	
kamethylene diisocyanate	EC0(ECx)	24h	Crusta	Crustacea			mg/l	1	
	EC50	72h Algae or other aquat		or other aquatic plants		>77.4	mg/l	2	
	Endpoint	Test Duration (hr)	Spe	Species		Valu	e	Source	
	NOEC(ECx)	48h	Cru	Crustacea			g/l	2	
methyl ethyl ketene	EC50	72h	Alga	Algae or other aquatic plants		1972	mg/l	2	
methyl ethyl ketone	EC50	48h	Cru	Crustacea		308n	ng/l	2	
	EC50	96h	Alga	Algae or other aquatic plants		>500mg/l		4	
	LC50	96h	Fish	I		>324	mg/L	4	
Legend:		IUCLID Toxicity Data 2. Europe							

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 Methyl Ethyl Ketone: log Kow: 0.26-0.69; log Koc: 0.69; Koc: 34; Half-life (hr) air: 2.3; Half-life (hr) H2O surface water: 72-288; Henry's atm m3 /mol: 1.05E-05; BOD 5: 1.5-2.24, 46%; COD: 2.2-2.31, 100%; ThOD: 2.44; BCF: 1. Environmental Fate: Terrestrial Fate - Measured Koc values of 29 and 34 were obtained for methyl ethyl in soil. 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. For Ketones: Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.

Aquatic Fate: Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones. Reactions with water are reversible with no permanent change in the structure of the ketone substrate.

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
methyl ethyl ketone	LOW (Half-life = 14 days)	LOW (Half-life = 26.75 days)

Bioaccumulative potential

Ingredient	Bioaccumulation		
hexamethylene diisocyanate polymer	LOW (LogKOW = 7.5795)		
hexamethylene diisocyanate	LOW (LogKOW = 3.1956)		
methyl ethyl ketone	LOW (LogKOW = 0.29)		

Mobility in soil

Ingredient	Mobility
hexamethylene diisocyanate polymer	LOW (KOC = 18560000)
hexamethylene diisocyanate	LOW (KOC = 5864)
methyl ethyl ketone	MEDIUM (KOC = 3.827)

SECTION 13 Disposal considerations

Waste treatment methods	
Product / Packaging disposal	 Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: 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. 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. 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. In all cases disposal to sever may be subject to local laws and regulations and these should be considered first. DO NOT recycle spilled material. Consult State Land Waste Management Authority for disposal. Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal.

SECTION 14 Transport information

Labels Required Marine Pollutant NO Land transport (DOT) UN number 1866

UN proper shipping name	Resin Solution, flammable
Transport hazard class(es)	Class 3 Subrisk Not Applicable
Packing group	Ш
Environmental hazard	Not Applicable
Special precautions for user	Hazard Label3Special provisions149, B52, IB2, T4, TP1, TP8

Air transport (ICAO-IATA / DGR)

UN number	1866		
UN proper shipping name	Resin solution flammable	9	
	ICAO/IATA Class	3	
Transport hazard class(es)	ICAO / IATA Subrisk	Not Applicable	
	ERG Code	3L	
Packing group	II		
Environmental hazard	Not Applicable		
	Special provisions		A3
	Cargo Only Packing Instructions		364
	Cargo Only Maximum	Qty / Pack	60 L
Special precautions for user	Passenger and Cargo	Packing Instructions	353
	Passenger and Cargo Maximum Qty / Pack		5 L
	Passenger and Cargo	Limited Quantity Packing Instructions	Y341
	Passenger and Cargo	Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

	•
UN number	1866
UN proper shipping name	RESIN SOLUTION flammable
Transport hazard class(es)	IMDG Class 3 IMDG Subrisk Not Applicable
Packing group	И
Environmental hazard	Not Applicable
Special precautions for user	EMS NumberF-E, S-ESpecial provisionsNot ApplicableLimited Quantities5 L

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

Not Applicable

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

Product name	Group
hexamethylene diisocyanate polymer	Not Available
hexamethylene diisocyanate	Not Available
methyl ethyl ketone	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
hexamethylene diisocyanate polymer	Not Available
hexamethylene diisocyanate	Not Available
methyl ethyl ketone	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

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Poly 100 B Clear

US DOE Temporary Emergency Exposure Limits (TEELs) US TSCA Chemical Substance Inventory - Interim List of Active Substances US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory US TSCA New Chemical Exposure Limits (NCEL) hexamethylene diisocyanate is found on the following regulatory lists US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants US EPCRA Section 313 Chemical List US NIOSH Recommended Exposure Limits (RELs) US - Massachusetts - Right To Know Listed Chemicals US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs) US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory US TSCA Chemical Substance Inventory - Interim List of Active Substances US Clean Air Act - Hazardous Air Pollutants US DOE Temporary Emergency Exposure Limits (TEELs) US TSCA New Chemical Exposure Limits (NCEL) US EPA Integrated Risk Information System (IRIS) US TSCA Section 4/12 (b) - Sunset Dates/Status methyl ethyl ketone is found on the following regulatory lists US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants US EPA Integrated Risk Information System (IRIS) US - Massachusetts - Right To Know Listed Chemicals US NIOSH Recommended Exposure Limits (RELs) US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs) US OSHA Permissible Exposure Limits (PELs) Table Z-1 US DOE Temporary Emergency Exposure Limits (TEELs) US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals US TSCA Chemical Substance Inventory - Interim List of Active Substances

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	No
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 (Ib)	Reportable Quantity in kg
hexamethylene diisocyanate	100	45.4
methyl ethyl ketone	5000	2270
methyl ethyl ketone	5000	2270

State Regulations

US. California Proposition 65

None Reported

National Inventory Status

National Inventory	Status	
Australia - AIIC / Australia Non-Industrial Use	Yes	
Canada - DSL	Yes	
Canada - NDSL	No (hexamethylene diisocyanate; methyl ethyl ketone)	
China - IECSC	Yes	
Europe - EINEC / ELINCS / NLP	Yes	
Japan - ENCS	No (hexamethylene diisocyanate polymer)	
Korea - KECI	Yes	

National Inventory	Status	
New Zealand - NZIoC	Yes	
Philippines - PICCS	Yes	
USA - TSCA	Yes	
Taiwan - TCSI	Yes	
Mexico - INSQ	No (hexamethylene diisocyanate polymer)	
Vietnam - NCI	Yes	
Russia - FBEPH	Yes	
Legend:	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

Revision Date	06/10/2022
Initial Date	11/15/2020

CONTACT POINT

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

SDS Version Summary

Version	Date of Update	Sections Updated
1.2	06/10/2022	Exposure Standard, Ingredients

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

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
- ES: Exposure Standard
- 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
- AIIC: Australian Inventory of Industrial Chemicals DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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