



# Polyurea 5100 'A' Slate

## ICP Construction Inc.

Version No: 4.7  
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 11/15/2022  
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S.GHS.USA.EN

### SECTION 1 Identification

#### Product Identifier

Product name	Polyurea 5100 'A' Slate
Synonyms	Not Available
Proper shipping name	Polyamines, liquid, corrosive, n.o.s. (contains Latent aliphatic polyamine)
Other means of identification	Not Available

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

Relevant identified uses	Specialty flooring product
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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	1-866-667-5119 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	1-800-255-3924
Other emergency telephone numbers	1-813-248-0585

### SECTION 2 Hazard(s) identification

#### Classification of the substance or mixture

NFPA 704 diamond



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	Skin Corrosion/Irritation Category 1B, Flammable Liquids Category 4, Corrosive to Metals Category 1, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Skin) Category 1, Carcinogenicity Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3
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#### Label elements

Hazard pictogram(s)	
Signal word	<b>Danger</b>

#### Hazard statement(s)

H314	Causes severe skin burns and eye damage.
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## Polyurea 5100 'A' Slate

H227	Combustible liquid.
H290	May be corrosive to metals.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H412	Harmful to aquatic life with long lasting effects.

### Hazard(s) not otherwise classified

Not Applicable

### Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P234	Keep only in original container.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing must not be allowed out of the workplace.

### Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P363	Wash contaminated clothing before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

### Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P406	Store in corrosive resistant/ container with a resistant inner liner.

### 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
136210-30-5	30-60	<u>aspartic acid, N,N'-(methylenedicyclohexanediy)bis-, ester</u>
623-91-6*	1-5	<u>Aliphatic carboxylic ester</u>
136210-32-7	15-40	<u>aspartic acid, N,N'-(methylenedicyclohexanediy)bis-, ester</u>
82919-37-7	0.1-1	<u>methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate</u>
41556-26-7	1-5	<u>bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate</u>
54914-37-3	1-5	<u>Latent aliphatic polyamine</u>
78-93-3	1-5	<u>methyl ethyl ketone</u>
1333-86-4	0.1-1	<u>carbon black</u>
145899-78-1	0.1-1	<u>3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)</u>
13463-67-7*	3-7	<u>Titanium Dioxide TiO2</u>

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

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## Polyurea 5100 'A' Slate

## SECTION 4 First-aid measures

## Description of first aid measures

<p><b>Eye Contact</b></p>	<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> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ If liquid amines come in contact with the eyes, irrigate immediately and continuously with low pressure flowing water, preferably from an eye wash fountain, for 15 to 30 minutes.</li> <li>▶ For more effective flushing of the eyes, use the fingers to spread apart and hold open the eyelids. The eyes should then be "rolled" or moved in all directions.</li> <li>▶ Seek immediate medical attention, preferably from an ophthalmologist.</li> </ul>
<p><b>Skin Contact</b></p>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly 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> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ In case of major exposure to liquid amine, promptly remove any contaminated clothing, including rings, watches, and shoe, preferably under a safety shower.</li> <li>▶ Wash skin for 15 to 30 minutes with plenty of water and soap. Call a physician immediately.</li> <li>▶ Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering.</li> <li>▶ Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.</li> <li>▶ Discard contaminated leather articles such as shoes, belts, and watchbands.</li> <li>▶ Note to Physician: Treat any skin burns as thermal burns. After decontamination, consider the use of cold packs and topical antibiotics.</li> </ul>
<p><b>Inhalation</b></p>	<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> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b> (ICSC13719)</p> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ All employees working in areas where contact with amine catalysts is possible should be thoroughly trained in the administration of appropriate first aid procedures.</li> <li>▶ Experience has demonstrated that prompt administration of such aid can minimize the effects of accidental exposure.</li> <li>▶ Promptly move the affected person away from the contaminated area to an area of fresh air.</li> <li>▶ Keep the affected person calm and warm, but not hot.</li> <li>▶ If breathing is difficult, oxygen may be administered by a qualified person.</li> <li>▶ If breathing stops, give artificial respiration. Call a physician at once.</li> </ul>
<p><b>Ingestion</b></p>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ If liquid amine are ingested, have the affected person drink several glasses of water or milk.</li> <li>▶ Do not induce vomiting.</li> <li>▶ Immediately transport to a medical facility and inform medical personnel about the nature of the exposure. The decision of whether to induce vomiting should be made by an attending physician.</li> </ul>

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

See Section 11

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

Treat symptomatically.

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

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## Polyurea 5100 'A' Slate

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.
  - \* Catharsis and emesis are absolutely contra-indicated.
  - \* Activated charcoal does not absorb alkali.
  - \* Gastric lavage should not be used.
- Supportive care involves the following:
- ▶ Withhold oral feedings initially.
  - ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
  - ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
  - ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

### SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

### For amines:

- ▶ Certain amines may cause injury to the respiratory tract and lungs if aspirated. Also, such products may cause tissue destruction leading to stricture. If lavage is performed, endotracheal and/or esophagosopic control is suggested.
- ▶ No specific antidote is known.
- ▶ Care should be supportive and treatment based on the judgment of the physician in response to the reaction of the patient.

Laboratory animal studies have shown that a few amines are suspected of causing depletion of certain white blood cells and their precursors in lymphoid tissue. These effects may be due to an immunosuppressive mechanism.

Some persons with hyperreactive airways (e.g., asthmatic persons) may experience wheezing attacks (bronchospasm) when exposed to airway irritants.

Lung injury may result following a single massive overexposure to high vapour concentrations or multiple exposures to lower concentrations of any pulmonary irritant material.

Health effects of amines, such as skin irritation and transient corneal edema ("blue haze," "halo effect," "glaucompsia"), are best prevented by means of formal worker education, industrial hygiene monitoring, and exposure control methods. Persons who are highly sensitive to the triggering effect of non-specific irritants should not be assigned to jobs in which such agents are used, handled, or manufactured.

**Medical surveillance programs** should consist of a pre-placement evaluation to determine if workers or applicants have any impairments (e.g., hyperreactive airways or bronchial asthma) that would limit their fitness for work in jobs with potential for exposure to amines. A clinical baseline can be established at the time of this evaluation.

Periodic medical evaluations can have significant value in the early detection of disease and in providing an opportunity for health counseling.

Medical personnel conducting medical surveillance of individuals potentially exposed to polyurethane amine catalysts should consider the following:

- ▶ Health history, with emphasis on the respiratory system and history of infections
- ▶ Physical examination, with emphasis on the respiratory system and the lymphoreticular organs (lymph nodes, spleen, etc.)
- ▶ Lung function tests, pre- and post-bronchodilator if indicated
- ▶ Total and differential white blood cell count
- ▶ Serum protein electrophoresis

Persons who are concurrently exposed to isocyanates also should be kept under medical surveillance.

Pre-existing medical conditions generally aggravated by exposure include skin disorders and allergies, chronic respiratory disease (e.g. bronchitis, asthma, emphysema), liver disorders, kidney disease, and eye disease.

Broadly speaking, exposure to amines, as characterised by amine catalysts, may cause effects similar to those caused by exposure to ammonia. As such, amines should be considered potentially injurious to any tissue that is directly contacted.

Inhalation of aerosol mists or vapors, especially of heated product, can result in chemical pneumonitis, pulmonary edema, laryngeal edema, and delayed scarring of the airway or other affected organs. There is no specific treatment.

Clinical management is based upon supportive treatment, similar to that for thermal burns.

Persons with major skin contact should be maintained under medical observation for at least 24 hours due to the possibility of delayed reactions.

**Polyurethane Amine Catalysts: Guidelines for Safe Handling and Disposal Technical Bulletin June 2000**

**Alliance for Polyurethanes Industry**

## SECTION 5 Fire-fighting measures

### Extinguishing media

- ▶ 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>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ For firefighting, cleaning up large spills, and other emergency operations, workers must wear a self-contained breathing apparatus with full face-piece, operated in a pressure-demand mode.</li> <li>▶ Airline and air purifying respirators should not be worn for firefighting or other emergency or upset conditions.</li> <li>▶ Respirators should be used in conjunction with a respiratory protection program, which would include suitable fit testing and medical evaluation of the user.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> </ul> <p>Combustion products include: carbon dioxide (CO<sub>2</sub>) nitrogen oxides (NO<sub>x</sub>) other pyrolysis products typical of burning organic material. May emit corrosive fumes.</p>

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

Continued...

## Polyurea 5100 'A' Slate

See section 12

## Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul> <p>for amines:</p> <ul style="list-style-type: none"> <li>▶ If possible (i.e., without risk of contact or exposure), stop the leak.</li> <li>▶ Contain the spilled material by diking, then neutralize.</li> <li>▶ Next, absorb the neutralized product with clay, sawdust, vermiculite, or other inert absorbent and shovel into containers.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ First remove all ignition sources from the spill area.</li> <li>▶ Have firefighting equipment nearby, and have firefighting personnel fully trained in the proper use of the equipment and in the procedures used in fighting a chemical fire.</li> <li>▶ Spills and leaks of polyurethane amine catalysts should be contained by diking, if necessary, and cleaned up only by properly trained and equipped personnel.</li> </ul>

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>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure 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.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ <b>DO NOT store near acids, or oxidising agents</b></li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> </ul>

## Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▶ Drums and jerricans must be of the non-removable head type.</li> <li>▶ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt.</p>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Segregate from alcohol, water.</li> <li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> <li>▶ Avoid contact with copper, aluminium and their alloys.</li> <li>▶ Avoid reaction with oxidising agents</li> </ul> <p>Amines are incompatible with:</p> <ul style="list-style-type: none"> <li>· isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides.</li> <li>· strong reducing agents such as hydrides, due to the liberation of flammable gas.</li> </ul> <p>Amines possess a characteristic ammonia smell, liquid amines have a distinctive "fishy" smell.</p>

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	methyl ethyl ketone	2-Butanone (Methyl ethyl ketone)	200 ppm / 590 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	methyl ethyl ketone	2-Butanone	200 ppm / 590 mg/m <sup>3</sup>	885 mg/m <sup>3</sup> / 300 ppm	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	carbon black	Carbon black	3.5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	carbon black	Inert or Nuisance Dust: Total Dust	15 mg/m <sup>3</sup> / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	carbon black	Inert or Nuisance Dust: Respirable fraction	5 mg/m <sup>3</sup> / 15 mppcf	Not Available	Not Available	Not Available

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## Polyurea 5100 'A' Slate

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELS)	carbon black	Carbon black	3.5 mg/m3	Not Available	Not Available	Ca; TWA 0.1 mg PAHs/m3 [Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs)] See Appendix A See Appendix C
US OSHA Permissible Exposure Limits (PELs) Table Z-1	Titanium Dioxide TiO2	Titanium dioxide - Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	Titanium Dioxide TiO2	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	Titanium Dioxide TiO2	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELS)	Titanium Dioxide TiO2	Titanium dioxide	Not Available	Not Available	Not Available	Ca; See Appendix A

## Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methyl ethyl ketone	Not Available	Not Available	Not Available
carbon black	9 mg/m3	99 mg/m3	590 mg/m3
Titanium Dioxide TiO2	30 mg/m3	330 mg/m3	2,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester	Not Available	Not Available
Aliphatic carboxylic ester	Not Available	Not Available
aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester	Not Available	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available	Not Available
bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	Not Available	Not Available
Latent aliphatic polyamine	Not Available	Not Available
methyl ethyl ketone	3,000 ppm	Not Available
carbon black	1,750 mg/m3	Not Available
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	Not Available	Not Available
Titanium Dioxide TiO2	5,000 mg/m3	Not Available


## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester	D	> 0.1 to ≤ 1 ppm
Aliphatic carboxylic ester	E	≤ 0.1 ppm
aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester	D	> 0.1 to ≤ 1 ppm
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	D	> 0.1 to ≤ 1 ppm
bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	D	> 0.1 to ≤ 1 ppm
Latent aliphatic polyamine	D	> 0.1 to ≤ 1 ppm
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	D	> 0.1 to ≤ 1 ppm

## Notes:

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.

## Exposure controls

<b>Appropriate engineering controls</b>	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.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Chemical goggles.</li> <li>▶ Full face shield may be required for supplementary but never for primary protection of eyes.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.</li> </ul>

## Polyurea 5100 'A' Slate

	<p>For amines: SPECIAL PRECAUTION:</p> <ul style="list-style-type: none"> <li>▶ Because amines are alkaline materials that can cause rapid and severe tissue damage, wearing of contact lenses while working with amines is strongly discouraged. Wearing such lenses can prolong contact of the eye tissue with the amine, thereby causing more severe damage.</li> <li>▶ Appropriate eye protection should be worn whenever amines are handled or whenever there is any possibility of direct contact with liquid products, vapors, or aerosol mists.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul> <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>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>▶ Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as they cannot be adequately decontaminated</li> </ul> <p>For amines:</p> <ul style="list-style-type: none"> <li>▶ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.</li> <li>▶ Application of a non-perfumed moisturiser is recommended</li> <li>▶ Where there is a possibility of exposure to liquid amines skin protection should include: rubber gloves, (neoprene, nitrile, or butyl).</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]</li> <li>▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted.</li> <li>▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.</li> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> </ul>

**Respiratory protection**

Type AK-P 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

Where engineering controls are not feasible and work practices do not reduce airborne amine concentrations below recommended exposure limits, appropriate respiratory protection should be used. In such cases, air-purifying respirators equipped with cartridges designed to protect against amines are recommended.

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

<b>Appearance</b>	Moisture sensitive. Family of products which vary in their physical properties as a result of variations in production. Data presented here is for typical family member.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<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>	86	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Combustible.	<b>Oxidising properties</b>	Not Available

Continued...

## Polyurea 5100 'A' Slate

Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	<5

## SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<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>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## SECTION 11 Toxicological information

## Information on toxicological effects

Inhaled	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.</p>
Ingestion	<p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p> <p>High molecular weight material; on single acute exposure would be expected to pass through gastrointestinal tract with little change / absorption. Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort.</p>
Skin Contact	<p>The material can produce chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Volatile amine vapours produce irritation and inflammation of the skin. Direct contact can cause burns.</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>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p>
Eye	<p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> <p>Vapours of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in "halos" around lights. This effect is temporary, lasting only for a few hours. However this condition can reduce the efficiency of undertaking skilled tasks, such as driving a car.</p>
Chronic	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.</p> <p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</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>There is sufficient evidence to suggest that this material directly causes cancer in humans.</p>

Polyurea 5100 'A' Slate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye : Mild
	Inhalation(Rat) LC50: >4.224 mg/L4h <sup>[1]</sup>	Skin : Moderate
	Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>	
Aliphatic carboxylic ester	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (Mouse) LD50; 2227 mg/kg <sup>[2]</sup>	Not Available
	Oral (Rat) LD50; 1780 mg/kg <sup>[2]</sup>	



## Polyurea 5100 'A' Slate

	TOXICITY	IRRITATION
aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester	dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Eye : Mild
	Inhalation(Rat) LC50: >4.224 mg/L4h <sup>[1]</sup>	Skin : Moderate
	Oral (Rat) LD50: >2000 mg/kg <sup>[2]</sup>	
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	TOXICITY	IRRITATION
	Not Available	Not Available
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	TOXICITY	IRRITATION
	Oral (Rat) LD50; 3100 mg/kg <sup>[2]</sup>	Not Available
Latent aliphatic polyamine	TOXICITY	IRRITATION
	dermal (rat) LD50: >5080 mg/kg <sup>[2]</sup>	Skin (rabbit) 4h: CORROSIVE
	Oral (Rat) LD50; 4150 mg/kg <sup>[2]</sup>	
methyl ethyl ketone	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 6480 mg/kg <sup>[2]</sup>	Eye (human): 350 ppm -irritant
	Inhalation(Mouse) LC50; 32 mg/L4h <sup>[2]</sup>	Eye (rabbit): 80 mg - irritant
	Oral (Rat) LD50; 2054 mg/kg <sup>[1]</sup>	Skin (rabbit): 402 mg/24 hr - mild
		Skin (rabbit):13.78mg/24 hr open
carbon black	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >3000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50; >8000 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Not Available
	Oral (Rat) LD50: >2000 mg/kg <sup>[2]</sup>	
Titanium Dioxide TiO2	TOXICITY	IRRITATION
	dermal (hamster) LD50: >=10000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: >2.28 mg/l4h <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50; >=2000 mg/kg <sup>[1]</sup>	

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

Polyurea 5100 'A' Slate	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.
ASPARTIC ACID, N,N'-(METHYLENEDICYCLOHEXANEDIYL)BIS-,ESTER	for similar substance CAS 136210-10-32-7: 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.
Aliphatic carboxylic ester	for diethyl fumarate <b>Repeat dose toxicity:</b> In an oral combined repeated dose and reproductive/developmental toxicity test at doses of 0, 11, 30 and 100 mg/kg/day [OECD TG 422], no effects were observed on clinical signs, body weight, food consumption, urinalysis, haematology or blood chemistry examinations. Histopathological examination of the forestomach revealed thickening of the mucosal layer in both sexes of all treated groups, hyperkeratosis in males of all treated groups and in females of the 30 and 100 mg/kg groups. These changes were dose-dependent.
LATENT ALIPHATIC POLYAMINE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.
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.
CARBON BLACK	Inhalation (rat) TClO: 50 mg/m <sup>3</sup> /6h/90D-I Nil reported <b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

## Polyurea 5100 'A' Slate

3-OXAZOLIDINEETHANOL, 2-(1-METHYLETHYL)-, CARBONATE (2:1)	* Industrial Copolymers Limited SDS (incozol LV)
Polyurea 5100 'A' Slate & LATENT ALIPHATIC POLYAMINE & 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.
Polyurea 5100 'A' Slate & ASPARTIC ACID, N,N'-(METHYLENEDICYCLOHEXANEDIYL)BIS-,ESTER & METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE & BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL)SEBACATE & LATENT ALIPHATIC POLYAMINE & 3-OXAZOLIDINEETHANOL, 2-(1-METHYLETHYL)-, CARBONATE (2:1)	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.
ASPARTIC ACID, N,N'-(METHYLENEDICYCLOHEXANEDIYL)BIS-,ESTER	Evidence of sensitisation (adjuvant test) * After the first challenge very mild to clearly visible skin reddening was observed in 85% of the test substance animals. After the second challenge, very mild to clearly visible skin reddening was observed in 50% and 35% of the test substance animals challenged with 25% and 12% test substance respectively. A scaly administration site was observed in some animals. Rat repeat dose oral toxicity - 29 days NOAEL 1000 mg/kg/day * Genotoxicity ? bacterial reverse mutation non mutagenic * Genotoxicity ? in vitro not determined * Genotoxicity ? in vivo erythrocyte micronucleus test non clastogenic * The notified chemical is considered to be of low acute toxicity via the oral, dermal and inhalation routes. Irritation and Sensitisation. The material is considered to be a slight skin and eye irritant and mild respiratory irritant and a skin sensitiser. As skin reactions were observed in 85% of animals at a concentration of 50%, the substance is considered to be a strong sensitiser. The potential for respiratory sensitisation cannot be ruled out. Repeated Dose Toxicity. In a 28 day study in rats, the No Observed Adverse Effect Level (NOAEL) was established as 1000 mg/kg bw/day based on the absence of adverse treatment related effects. Mutagenicity. The material was negative in an Ames test and an in vivo erythrocyte micronucleus test. The substance is not considered to be mutagenic. Neurotoxicity: In the in vivo mouse erythrocyte micronucleus test, following intraperitoneal administration of a fairly high dose (5345 mg/kg bw) some evidence of non-specific neurological impairment was seen. However, this was not observed in any of the tests conducted on any other species and could either be species-specific or an expression of generalised toxicity induced at high doses, as opposed to specific neurotoxicity. * NICNAS Report 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.
METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE & CARBON BLACK & TITANIUM DIOXIDE	No significant acute toxicological data identified in literature search.
LATENT ALIPHATIC POLYAMINE & METHYL ETHYL KETONE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

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

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

## SECTION 12 Ecological information

## Toxicity

Endpoint	Test Duration (hr)	Species	Value	Source
Polyurea 5100 'A' Slate	Not Available	Not Available	Not Available	Not Available
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	EC50	72h	Algae or other aquatic plants	34mg/l 2
	EC50	48h	Crustacea	88.6mg/l Not Available
	NOEC(ECx)	48h	Crustacea	10mg/l Not Available
	LC50	96h	Fish	66mg/l 2
Aliphatic carboxylic ester	NOEC(ECx)	0.82h	Algae or other aquatic plants	>=250mg/l 4
	aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	EC50	72h	Algae or other aquatic plants
EC50		48h	Crustacea	88.6mg/l Not Available
NOEC(ECx)		48h	Crustacea	10mg/l Not Available

Continued...

## Polyurea 5100 'A' Slate

	LC50	96h	Fish	66mg/l	2
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	Not Available	Not Available	Not Available	Not Available	Not Available
bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC0(ECx)	24h	Crustacea	<10mg/l	1
	LC50	96h	Fish	0.34mg/l	1
Latent aliphatic polyamine	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	NOEC(ECx)	48h	Crustacea	7.5mg/l	2
	EC50	72h	Algae or other aquatic plants	9.6mg/l	2
	EC50	48h	Crustacea	14.7mg/l	2
	LC50	96h	Fish	>53.7mg/l	2
methyl ethyl ketone	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	NOEC(ECx)	48h	Crustacea	68mg/l	2
	EC50	72h	Algae or other aquatic plants	1972mg/l	2
	EC50	48h	Crustacea	308mg/l	2
	LC50	96h	Fish	>324mg/L	4
carbon black	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC50	72h	Algae or other aquatic plants	>0.2mg/l	2
	EC50	48h	Crustacea	33.076-41.968mg/l	4
	NOEC(ECx)	24h	Crustacea	3200mg/l	1
	LC50	96h	Fish	>100mg/l	2
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	EC50	48h	Crustacea	>100mg/l	Not Available
	EC50(ECx)	48h	Crustacea	>100mg/l	Not Available
Titanium Dioxide TiO2	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	BCF	1008h	Fish	<1.1-9.6	7
	EC50	72h	Algae or other aquatic plants	3.75-7.58mg/l	4
	EC50	48h	Crustacea	1.9mg/l	2
	NOEC(ECx)	504h	Crustacea	0.02mg/l	4
	LC50	96h	Fish	1.85-3.06mg/l	4
EC50	96h	Algae or other aquatic plants	179.05mg/l	2	

**Legend:**

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

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

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

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For high molecular weight synthetic polymers: (according to the Sustainable Futures (SF) program (U.S. EPA 2005b; U.S. EPA 2012c) polymer assessment guidance.)

High MW polymers are expected:

- to have low vapour pressure and are not expected to undergo volatilization .

- to adsorb strongly to soil and sediment

- to be non-biodegradable (not anticipated to be assimilated by microorganisms.- therefore, biodegradation is not expected to be an important removal process. However many exceptions exist

High MW polymers are not expected to undergo removal by other degradative processes under environmental conditions

Prevent, by any means available, spillage from entering drains or water courses.

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

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
Aliphatic carboxylic ester	LOW	LOW
methyl ethyl ketone	LOW (Half-life = 14 days)	LOW (Half-life = 26.75 days)
Titanium Dioxide TiO2	HIGH	HIGH

Continued...

## Polyurea 5100 'A' Slate

## Bioaccumulative potential

Ingredient	Bioaccumulation
Aliphatic carboxylic ester	LOW (LogKOW = 2.1955)
methyl ethyl ketone	LOW (LogKOW = 0.29)
Titanium Dioxide TiO2	LOW (BCF = 10)

## Mobility in soil

Ingredient	Mobility
Aliphatic carboxylic ester	LOW (KOC = 10.9)
methyl ethyl ketone	MEDIUM (KOC = 3.827)
Titanium Dioxide TiO2	LOW (KOC = 23.74)


## SECTION 13 Disposal considerations

## Waste treatment methods

Product / Packaging disposal	<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> <li>▶ Recycle wherever possible.</li> <li>▶ 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.</li> <li>▶ Treat and neutralise at an approved treatment plant.</li> </ul>
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## SECTION 14 Transport information

## Labels Required

	
Marine Pollutant	NO

## Land transport (DOT)

DOT Shipping Name	2735	
UN proper shipping name	Polyamines, liquid, corrosive, n.o.s. (contains Latent aliphatic polyamine)	
Transport hazard class(es)	Class	8
	Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Hazard Label	8
	Special provisions	IB3, T7, TP1, TP28

## Air transport (ICAO-IATA / DGR)

UN number	2735	
UN proper shipping name	Polyamines, liquid, corrosive, n.o.s. * (contains Latent aliphatic polyamine)	
Transport hazard class(es)	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A3 A803
	Cargo Only Packing Instructions	856
	Cargo Only Maximum Qty / Pack	60 L

## Polyurea 5100 'A' Slate

Passenger and Cargo Packing Instructions	852
Passenger and Cargo Maximum Qty / Pack	5 L
Passenger and Cargo Limited Quantity Packing Instructions	Y841
Passenger and Cargo Limited Maximum Qty / Pack	1 L

## Sea transport (IMDG-Code / GGVSee)

UN number	2735	
UN proper shipping name	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains Latent aliphatic polyamine)	
Transport hazard class(es)	IMDG Class	8
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	EMS Number	F-A, S-B
	Special provisions	223 274
	Limited Quantities	5 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
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	Not Available
Aliphatic carboxylic ester	Not Available
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available
bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	Not Available
Latent aliphatic polyamine	Not Available
methyl ethyl ketone	Not Available
carbon black	Not Available
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	Not Available
Titanium Dioxide TiO2	Not Available

## Transport in bulk in accordance with the ICG Code

Product name	Ship Type
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	Not Available
Aliphatic carboxylic ester	Not Available
aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available
bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	Not Available
Latent aliphatic polyamine	Not Available
methyl ethyl ketone	Not Available
carbon black	Not Available
3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1)	Not Available
Titanium Dioxide TiO2	Not Available

## SECTION 15 Regulatory information

## Safety, health and environmental regulations / legislation specific for the substance or mixture

aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester is found on the following regulatory lists

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

Aliphatic carboxylic ester is found on the following regulatory lists

## Polyurea 5100 'A' Slate

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

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

**aspartic acid, N,N'-(methylenedicyclohexanediyl)bis-,ester is found on the following regulatory lists**

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate is found on the following regulatory lists**

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate is found on the following regulatory lists**

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**Latent aliphatic polyamine is found on the following regulatory lists**

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**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

**carbon black is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List

US DOE Temporary Emergency Exposure Limits (TEELs)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

US NIOSH Carcinogen List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

US NIOSH Recommended Exposure Limits (RELs)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

US OSHA Permissible Exposure Limits (PELs) Table Z-3

US - California Proposition 65 - Carcinogens

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

US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

US TSCA Chemical Substance Inventory - Interim List of Active Substances

US - Massachusetts - Right To Know Listed Chemicals

**3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1) is found on the following regulatory lists**

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**Titanium Dioxide TiO2 is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List

US DOE Temporary Emergency Exposure Limits (TEELs)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

US NIOSH Carcinogen List

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

US NIOSH Recommended Exposure Limits (RELs)

US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US - California Proposition 65 - Carcinogens

US OSHA Permissible Exposure Limits (PELs) Table Z-3

US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

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

US - Massachusetts - Right To Know Listed 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	Yes
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No

Continued...

## Polyurea 5100 'A' Slate

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
methyl ethyl ketone	5000	2270
methyl ethyl ketone	5000	2270

## State Regulations

## US. California Proposition 65

**WARNING:** This product can expose you to chemicals including **carbon black, Titanium Dioxide TiO2**, which are known to the State of California to cause cancer. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## National Inventory Status

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	No (3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Canada - DSL	No (Aliphatic carboxylic ester; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Canada - NDSL	No (aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate; bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate; Latent aliphatic polyamine; methyl ethyl ketone; carbon black; Titanium Dioxide TiO2)
China - IECSC	No (3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Europe - EINEC / ELINCS / NLP	No (aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Japan - ENCS	No (aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; aspartic acid, N,N'-(methylenedicyclohexanediy)bis-,ester; methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate; Latent aliphatic polyamine; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
Vietnam - NCI	Yes
Russia - FBEPH	No (methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate; Latent aliphatic polyamine; 3-oxazolidineethanol, 2-(1-methylethyl)-, carbonate (2:1))
<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

Revision Date	11/15/2022
Initial Date	05/05/2021

## CONTACT POINT

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

## SDS Version Summary

Version	Date of Update	Sections Updated
3.7	11/15/2022	Ingredients, Physical Properties

## 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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