

Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Version: 1.2

Revision: 4/26/2022

Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade Name: AUS-V™ - Part B

1.2 Article No.: AUS-V™ - PART B

1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems
 1151 Transport Drive
 Valparaiso, IN 46383
 Toll Free: 888.323.4445
 Tel: (219) 465-7671
elitecrete.com

1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)
 CHEMTREC INTERNATIONAL: (703-527-3887)

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Tox: 4 H332 Harmful if inhaled.
 Skin Sens: 1 H317 May cause an allergic skin reaction.
 STOT SE: 3 H335 May cause respiratory irritation.

Classification according to Directive 1999/45/EC:

Xn; Harmful
 R20: Harmful if inhaled.
 Xi; Irritant
 R37: Irritating to respiratory system
 Xi; Sensitizing
 R43: may cause sensitization by skin contact.

Information concerning particular hazards for human and environment:

Product Description: This product is a water –white – pale straw-colored liquid with a mild odor.

Health Hazards: Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization

Flammability Hazards: This product is Flammable above its flash point of 320°F (160°C)

Reactivity Hazards: None known.

Environmental Hazards: The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data

2.2 Label elements

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Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07

Signal Word: Warning

Hazard-determining components of labeling:

Hexamethylene di-isocyanate oligomers, isocyanurate

Hexamethylene-di-isocyanate

Hazard statements

H332: Harmful if inhaled

H317: May cause an allergic skin reaction

H335: may cause respiratory irritation

Precautionary statements

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards:

Combustible liquid.

May cause eye irritation.

On contact with water carbon monoxide is released.

Results on PBT and vPvB assessment:

PBT: no

vPvB: no

Hazard description:

Canadian WHMIS Classification: This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

WHMIS-symbols:



NFPA ratings (scale 0 - 4)



Health = 2

Fire = 1

Reactivity = 1

HMIS-ratings (scale 0 - 4)

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Health	2
Fire	1
Reactivity	1

 Health = 2
 Fire = 1
 Reactivity = 1

2.3 Other hazards

No known

3 Composition/information on ingredients

3.2 Mixture.

Description: Mixture of substances listed below with nonhazardous additives.

Hazardous components:

Identification #	Description	WT. %
CAS: 28182-81-2 EINECS: 931-274-8 Reg.Number:01-2119485796-17-0002	Hexamethylene diisocyanate oligomers, Isocyanurate HAZARD CLASSIFICATION: Xn R20, Xi R37, R 43 Acute tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H##%	99.6%
CAS: 822-06-0 EINECS212-485-8 Reg. Number: 01-2119457571-37-0001	Hexamethylene-di-isocyanate HAZARD CLASSIFICATION: T R23, Xn R42/43; Xi R36/37/38 Acute tox. 1, H330; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	< 0.5%

Additional information: Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

4 First aid measures

4.1 Description of first aid measures

After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

4.2 Most important symptoms and effects, both acute and delayed.

No further relevant information available.

Hazards: Pre-existing skin or eye problems may be aggravated by exposure to this product.

4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

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5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

5.2 Special hazards arising from the substance or mixture: Combustible. During combustion toxic vapors are released.

5.3 Advice for firefighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Personnel should be trained for spill response operations. Wear full protective clothing, self-contained breathing apparatus, gloves and boots. Do not approach downwind without self-contained breathing mask. (NIOSH approved).

6.2 Environmental precautions: All work practices must be aimed at eliminating environmental contamination.

6.3 Methods and material for containment and cleaning up: Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Sections 7, 8, 13, for further cautions, clean up and Disposal Considerations).

7 Handling and storage

7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. provide good ventilation. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store in a cool dry place with a floor coated or lined for watertight basin. Avoid direct contact with skin and eyes. Do not store near acids or amines. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available... Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

7.3 Specific end use(s): No information

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The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I.

Exposure Limits**Homopolymer of Hexamethylene Diisocyanate (28182-81-2)**

AUS-V Part B Exposure Limit

Time weighted average 0.5 mg/m³

AUS-V Part B Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m³ (15-min)**Hexamethylene-1,6-Diisocyanate (822-06-0)**

US. ACGIH Threshold Limit Values

Time weighted average 0.005 ppm

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.1 Control parameters**Ingredients with limit values that require monitoring at the workplace:**

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

8.2 Exposure controls**Personal protective equipment:****General protective and hygienic measures:**

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Protection of hands: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

Eye protection: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Liquid

Color:

Colorless to pale yellow

Odor:

none

Odor threshold:

Not Available

pH-value:

Not Applicable (reacts with Water)

Boiling point/Boiling range:

Decomposition

Flash point:

>365°F (>185°C) (IN EN 22719)

Auto/Self-ignition temperature:

833°F (445°C) (DIN 51794)

Decomposition temperature:

357.8°F (181°C)

Explosion limits

oxidizing properties

Not established (Not oxidizing)

Not established (Not oxidizing)

Vapor pressure at 68°F (20 °C):

HDI Polyisocyanate: 5.2 X 10-9 mm/Hg

Density at 73°F (23°C):

 9.65 lbs. per gallon, specific gravity 1.16 g/cm³

Bulk density:

 Approximately 1,150 kg/m³

Solubility in / Miscibility with Water:

 Reacts slowly to liberate CO₂ gas.

Viscosity:

Dynamic:

800 mPa.s (cps) @68°F (20°C)

Solvent content:

Organic solvents:

VOC (EC)

0.00

9.2 Other information

No further relevant information available

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability: Product is stable at humanly acceptable environment temperature

Thermal decomposition / conditions to be avoided: When heated to decomposition this product produces noxious gases such as CO, CO₂, hydrocarbons and soot.

10.3 Possibility of hazardous reactions: reacts with water, aqueous solutions and alcohols, amines, bases, protic solvents with a great release of CO₂, and hence a risk of a pressure build up in confined areas, and forms an insoluble solid presipate.

10.4 Conditions to avoid: Contact with incompatible materials above

10.5 Incompatible materials: no further relevant information available than has been provided here.

10.6 Hazardous decomposition products: On thermal decomposition (pyrolysis) releases: toxic gases, Carbon dioxide,

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11 Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

LD/LC50 values:

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Oral LD0 > 2500 mg/kg (rat) (OECD 423 (female))

Dermal LD0 > 2000 mg/kg (rabbit) (OECD 402)

> 2000 mg/kg (rat) OECD 402)

Inhalative LC50/4h 0.390 mg/l (rat) (OECD 403)

822-06-0 hexamethylene-di-isocyanate

Oral LD50 746 mg/kg (rat) (OECD 401)

Dermal LD50 > 7000 mg/kg (rat) (OECD 402)

Inhalative LC50/4h 0.124 mg/l (rat) (OECD 403)

Primary irritant effect: Not classified as irritating to skin or eyes according to OECD 404, 405

Inhalation: May cause respiratory irritation. Source; Unpublished reports.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOAEC/ 6h 3mg/m³ (rat) (OECD TG 403) (TRGS)

Sensitization:

May cause sensitization on contact with skin.

(OECD 429) (mouse)

Is Not considered as a respiratory sensitizer (Guinea-pig)

Human data available. Unpublished reports.

Repeated dose toxicity:

Is Not considered health hazardous by prolonged or repeated exposure. (Unpublished reports)

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOEC 3.3mg/m³ (rat) (OECD 413)

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Tox Repeat 0.005 ppm (rat) (OECD 453)

Carcinogenicity:

Animal studies have not shown any carcinogenic potential.

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Carc 0.164 ppm (rat) (OECD 453)

Mutagenicity:

Chromosomal aberrations (OECD 473, V79 cells):

Negative

Unpublished reports

Reproductive toxicity:

This product is Not considered hazardous to the reproduction.

(Internal evaluation)

822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Dvlp/Tera Tox 0.3ppm (rat) (OECD 414)

NOAEC Material Tox 0.005 ppm (rat) (OECD 414)

NOAEC Fert 0.3 ppm (rat) (OECD 422)

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12 Ecological information

12.1 Toxicity

Aquatic toxicity: No evidence is currently available on this product's effects on aquatic life. Source unpublished reports.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

EC10/72h (static) 370 mg/l (Desmodesmus subspicatus) (EU C.3)
EL/50?48h (static) 127 mg/l (Daphnia magna) (EU C.2)
ErC50(0-72h) (static) 1000 mg/l (Desmosomes suspicious) (EU C.3)
LL0/96h $\geq$ 82.8 mg/l (Brachy danio rerio) EU C.1)

822-06-0 hexamethylene-di-isocyanate

EC0/48h (static) >89.1 mg/l (Daphnia magna) (EU C.2)
ErC50(0-72h) (static) >77.4 mg/l (Desmodesmus subspicatus) EU C.3)
LC0/96h (static) >82.8 mg/l (Brachy danio rerio) EU C.1)
NOEC/72h (static) 11.7 mg/l (Desmodesmus Subspicatus) (EU C.3)

12.2 Persistence and degradability:

Not biodegradable

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BOD28 1% (bacteria) ((EU C.4-E) (Unpublished report)
DT50 3h (photolysis) ((79°F, 25°C) (AOPWIN v1.92)
.7h (hydrolysis) ((73°F, 23°C) (ASTM D 4666(internal evaluation)

822-06-0 hexamethylene-di-isocyanate

BOD28 42% (bacteria) ((EU C.4-E)
DT50 79°F, 25°C, 48.44 h (Photolysis) (AOPWIN v1.92)
73°F, 23°C 0.23 h (Hydrolysis) (ASTN 4666)

Other information:

Reacts with:

-water and forms insoluble solid precipitate.

12.3 Bio accumulative potential:

Log Pow, see section 9.

Not bio accumulable

(internal evaluation)

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BCF 3.2 (fish) (BCFWIN v.217)

822-06-0 hexamethylene-di-isocyanate

BCF 58 (fish) BCFWIN v2.17)

12.4 Mobility in soil:

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Log Koc 7.8 (.) (PCKOCv1.66)

822-06-0 hexamethylene-di-isocyanate

Log Koc 5861 (.) (PCKOCv.166)

Other information: Formation of insoluble polyuria

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Ecological effects:

Behavior in sewerage processing plants.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

EC50/3h (static) (3828mg/l (bacteria) (OECD 209)

822-06-0 hexamethylene-di-isocyanate

EC50/3h (static) (842mg/l (bacteria) (OECD 209)

Additional ecological information;

General notes: Not classified as Dangerous for the environment

12.5 Results of PBT and vPvB assessment

PBT: no

vPvB: no

12.6 Other adverse effects: No further relevant information available

13 Disposal considerations

13.1 Waste treatment methods

Recommendations:

Neutralize with a mixture of ammonia solution (190 gm/l), water and ethanol (5%, 50% AND 45%)

Incinerate at a licensed installation in the EU. Disposal in USA waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: None Listed

EU WASTE CODE: 08-05-01

Un-cleaned packaging recommendation:

Allow container to drain thoroughly. Incinerate drums and containers at an approved licensed facility follow all local and federal laws and requirements. This is only a recommendation in lieu of direction.

14 Transport information

14.1 UN-Number

DOT: Canada TGD

not regulated

ADR, IMDG, IATA:

Not restricted (Non regulated)

14.2 UN proper shipping name

DOT: Canada TGD

NOT RESTRICTED NOT REGULATED

ADR, IMDG, IATA:

NOT Restricted (non regulated)

14.3 Transport hazard class(es)

DOT & Canada TGD



ADR, IMDG, IATA



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14.4 Packing group

DOT, Canada TGD

not regulated

14.5 Environmental hazards:

Marine pollutant:

This products ingredients are not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

14.6 Special precautions for user

Danger code (Kemler):

No data available

EMS Number:

No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

Transport/Additional information

 When individual containers are less than 33,332 lbs. (15119 kg)
 This material ships as non-regulated

ADR

Tunnel restriction code

No data available

UN "Model Regulation":

No data available

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

SARA: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Toxic Release Inventory): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed

Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16 Other information

Relevant phrases:

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

Precautionary statements

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO₂, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

R34: Causes burns.

R43: May cause sensitization by skin contact

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.