

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

GHS Product Code: C283-A-0W1
 Product Name: CORCHEM® 283 ENVIRONMENTAL FINISH COMPONENT A, COLOR: WHITE
 Recommended use: INDUSTRIAL PROTECTIVE COATING/LINING
 Restrictions on use: INTENDED FOR PROFESSIONAL USE ONLY
 Manufacturer: CORCHEM MANUFACTURING, INC.
 Address: 1227 SOUTH MURPHY STREET
 ODESSA TEXAS, USA 79766-8811
 Emergency phone: INFOTRAC: +1-352-323-3500 (TOLL-FREE IN THE US: 800-535-5053)
 Contract No. 74435
 Revision: 2-01222019

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification

- Category 1 Skin sensitization
Serious eye damage
- Category 1B Skin corrosion
- Category 2 Specific target organ toxicity, repeated exposure
STOT-RE: Oral
- Category 4 Acute toxicity – Oral

GHS Label elements, including precautionary statements

Hazard Pictograms



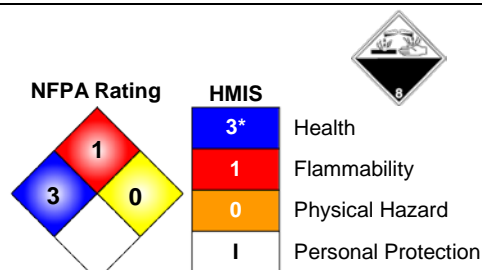
Signal word: **Danger**

GHS Hazard statement(s)

- H302 + H312: Harmful if swallowed or in contact with skin.
- H314: Causes severe skin burns and eye damage.
- H317: May cause an allergic skin reaction.
- H373a: May cause damage to organs through prolonged or repeated exposure if swallowed.

GHS Precautionary statement(s)

- P102: Keep out of reach of children.
- P202: Do not handle until all safety precautions have been read and understood.
- P234: Keep only in original container.
- P260: Do not breathe dust/fume/gas/mist/vapors/spray.
- P262: Do not get in eyes, on skin, or on clothing.
- P264: Wash thoroughly after handling.



PERSONAL PROTECTION INDEX			
A	Goggles	G	Goggles + Gloves + Respirator
B	Goggles + Gloves	H	Face Shield + Gloves + Apron + Respirator
C	Goggles + Gloves + Apron	I	Goggles + Gloves + Respirator
D	Respirator + Gloves + Apron	J	Face Shield + Gloves + Apron + Respirator
E	Goggles + Gloves + Respirator	K	Respirator + Gloves + Apron + Boots
F	Goggles + Gloves + Apron + Respirator	X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions
A	Safety Glasses	n	Splash Goggles
o	Face Shield & Eye Protection	p	Gloves
q	Boots	r	Synthetic Apron
s	Full Suit	Additional Information	
t	Dust Respirator	u	Vapor Respirator
w	Dust & Vapor Respirator	y	Full Face Respirator
z	Airline Hood or Mask		

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P270:	Do not eat, drink or smoke when using this product.
P271:	Use only outdoors or in a well-ventilated area.
P272:	Contaminated work clothing should not be allowed out of the workplace.
P273:	Avoid release to the environment.
P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P281:	Use personal protective equipment as required.
P284:	Wear respiratory protection.
P301 + 312:	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303 + 361 + 353:	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 + P3112:	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
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 + P314:	If exposed or concerned: Get medical advice / attention if you feel unwell.
P333 + 313:	If skin irritation or a rash occurs: Get medical advice/attention
P337 + P313:	If eye irritation persists: Get medical advice / attention.
P342 + 312:	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician if you feel unwell.
P391:	Collect spillage.
P401:	Store protected at temperatures between 40°F (4°C) and 100°F (38°C).
P403:	Store in a well ventilated place.
P410:	Protect from sunlight.
P501:	Dispose of contents/container to comply with the requirements of environmental protection and waste disposal legislation and any regional, local authority requirements.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Mixture

<u>Ingredient(s)</u>	<u>CAS No.</u>	<u>% (by Weight)</u>
Benzyl alcohol	100-51-6	<10
4,4'-Diaminodicyclohexyl methane	1761-71-3	>30
Glycidoxypropyltrimethoxysilane	2530-83-8	<5
2-Propoxyethanol	2807-30-9	<5
CBI Additives [NOT REGULATED BY GHS, DOT, IMDG, OR IATA]	MIXTURE	>50

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: FIRST AID MEASURES

Ingestion

If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. **Seek immediate medical attention**, contact a poison control center or doctor/physician for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, initiate and maintain continuous irrigation until patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing, seek immediate medical attention. If skin is not damaged and symptoms persist, avoid further exposure, **seek immediate medical attention**. Launder clothing before reuse.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If not breathing, if breathing is irregular, or if respiratory arrest occurs, artificial respiration or oxygen should be administered by trained personnel only. It may be dangerous to provide mouth-to-mouth resuscitation. Keep person warm and quiet; **seek immediate medical attention**. If unconscious, place in recovery position and get medical attention immediately. Maintain open airway. Loosen tight clothing such as a collar, tie, belt, or waistband. Get medical attention if adverse health effects persist or are severe.

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 30 minutes while holding eyelids open; seek immediate medical attention.

Protection of first aid personnel

No action shall be taken involving any personal risk without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, wear gloves.

Notes to Physicians or First Aid providers

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media

Alcohol-resistant foam, water-fog, carbon dioxide, dry chemicals, dry sand, Limestone powder.

Unsuitable extinguishing media

High volume water jet.

Specific hazards and by-products from combustion

May generate ammonia gas. May generate toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide. Burning produces noxious and toxic fumes. **Downwind personnel must be evacuated**. Decomposition products may be toxic and include the following materials: carbon dioxide, carbon monoxide, and various hydrocarbons. Fumes and vapors from the thermal and chemical decompositions vary widely in combustion and toxicity. Do not allow runoff from firefighting to enter drains or waterways. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment and precautions for fire-fighters

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Avoid contact with skin. A face shield should be worn. Use personal protective equipment.

CONTAMINATED FIRE EXTINGUISHING MEDIA MUST NOT BE DISCHARGED INTO WATERWAYS, SEWERS, DRAINS, OR THE ENVIRONMENT. FIRE RESIDUES AND CONTAMINATED FIRE EXTINGUISHING MEDIA MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

Flash point

Estimated: >200°F (>93°C)

Explosive limit

Not established

Autoignition temperature

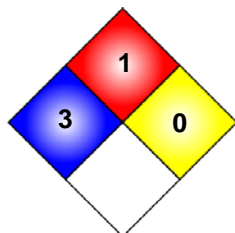
Not Established

Fire and explosion hazards

In a fire or if heated, a pressure increase will occur and the container may burst.

NFPA Rating

Health:	3
Flammability:	1
Reactivity:	0
Special:	



SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions

No action shall be taken involving personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Wear appropriate personal protective equipment (see section 8).

Environmental Precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

COLLECT CONTAMINATED MATERIAL SEPARATELY. RESIDUES AND CONTAMINATED MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

Small Spill

Stop leak if without risk. Dilute with water and mop up if water soluble or absorb liquid with a dry, inert, non-combustible, absorbent material such as: sand, diatomaceous earth, vermiculite, or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spill.

COLLECT CONTAMINATED CLEAN-UP MATERIALS SEPARATELY. RESIDUES AND CONTAMINATED CLEAN-UP MATERIALS MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

Large Spill

Stop leak if without risk. Move containers from spill area. Prevent run-off to sewers, water courses basements, or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with a dry, inert, non-combustible, absorbent material such as: sand, diatomaceous earth, vermiculite, or other absorbent material and place in container for disposal according to local regulations (see section 13). Dispose via a licensed waste disposal contractor. **Contaminated absorbent material may pose the same hazard as the spilled product.** If run-off occurs, notify proper authorities as required, that a spill has occurred. Note: see section 1 for emergency contact information and section 13 for waste disposal.

COLLECT CONTAMINATED CLEAN-UP MATERIALS SEPARATELY. RESIDUES AND CONTAMINATED CLEAN-UP MATERIALS MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

SECTION 7: HANDLING AND STORAGE

Handling

Wear appropriate personal protective equipment (see section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face prior to eating, drinking, and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage

Store in accordance with local regulations. Store in a dry, cool, climate controlled area between 40°F (8°C) and 100°F (38°C), away from incompatible materials (see section 10), food and drink. Keep container tightly closed and sealed until ready to use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Other Precautions

Consult local, state and federal hazardous waste regulators before disposing of waste materials.

Can cause skin irritation, eye irritation, and allergic skin reaction. Avoid contact with eyes, skin, and clothing. Wash thoroughly after using. **DO NOT TAKE INTERNALLY! HARMFUL IF SWALLOWED! FOR PROFESSIONAL USE ONLY.** Use protective skin cream such as FEND2 (MSA) where skin contact is likely. Prevent prolonged or repeated breathing of vapor, or spray mists. Liquid penetrated shoes and leather, causing delayed irritation or skin reactions. **KEEP OUT OF REACH OF CHILDREN. DO NOT HANDLE UNTIL THE MANUFACTURER'S INSTRUCTIONS AND SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD!** Contact manufacturer if further information is required.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit(s)

Note: The table includes Occupational Exposure Limits (OELs) for substances listed in the OSHA Z-1 – Z-3 tables as well as OEL's listed by NIOSH and ACGIH. These organizations periodically make revisions to their OELs and so they should be consulted directly for their most current values and substances, as well as special notations such as for skin absorption. The TLVs[®] and BEIs[®] are copyrighted by ACGIH[®] and are not publicly available. However, they can be purchased in their entirety from the ACGIH[®]. Permission must be requested from ACGIH[®] to reproduce the TLVs[®] and BEIs[®], CORCHEM[®] is a registered member of ACGIH[®].

Authorities:

ACGIH The American Conference of Governmental Industrial Hygienists

NIOSH United States Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health

OSHA United States Department of Labor, Occupational safety and Health Administration

BEI[®] Biological Exposure Indices: the BEI[®] is a guideline for the control of potential health hazards to the worker by knowledgeable occupational health professionals and should not be used for any other purpose.

IDLH Immediately Dangerous to Life and Health: is defined by (NIOSH) as exposure to airborne contaminants that is "likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment."

The OSHA regulation (1910.134(b)) defines the term as "an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere."

IDLH values are often used to guide the selection of breathing apparatus that are made available to workers or firefighters in specific situations.

mg/m³ Approximate milligrams of substance per cubic meter of air.

PEL Permissible Exposure Limit: usually given as a time-weighted average (TWA). A TWA is the average exposure over a specified period of time, usually a nominal eight hours.

ppm Parts of vapor or gas per million parts of contaminated air by volume at 25 degrees C and 760 torr.

REL Recommended Exposure Limit: is an occupational exposure limit that has been recommended by NIOSH to OSHA for adoption as a permissible exposure limit. The REL is a level that NIOSH believes would be protective of worker safety and health over a working lifetime if used in combination with engineering and work practice controls, exposure and medical monitoring, posting and labeling of hazards, worker training and personal protective equipment. Although not legally enforceable limits, NIOSH RELs are considered by OSHA during the promulgation of legally enforceable PELs.

TLV[®] Threshold Limit Value: TLVs[®] refer to airborne concentrations of chemical substances and represent conditions under which it is believed that *nearly all* workers may be repeatedly exposed, day-after-day, over a working lifetime, without adverse health effects.

TLV-C Threshold Limit Value-Ceiling: The concentration that should not be exceeded during any part of the working exposure.

TLV-STEL Threshold Limit Value-Short Term Exposure Limit: a 15 minute TWA exposure that should not be exceeded at any time during a work day, even if the 8-hour TWA is within the TLV-TWA.

TLV-TWA Threshold Limit Value-Time Weighted Average: the Time Weighted Average concentration for a conventional 8-hour workday and a 40-hour workweek to which it is believed that nearly all workers may be repeatedly exposed, day-after-day for a working lifetime without adverse effects.

TWA Time Weighted Average: is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.

<u>Component(s)</u>	<u>Exposure Level</u>	<u>Authority</u>	<u>Adopted Value(s)</u>		<u>Note</u>
Benzyl alcohol	IDLH	NIOSH	–	–	IDLH Not Determined
Benzyl alcohol	PEL	OSHA	–	–	OEL Not Established
Benzyl alcohol	TLV-TWA	ACGIH	–	–	OEL Not Established
Benzyl alcohol	REL-TWA	NIOSH	–	–	OEL Not Established
4,4'-Diaminodicyclohexyl methane	IDLH	NIOSH	–	–	IDLH Not Determined
4,4'-Diaminodicyclohexyl methane	PEL	OSHA	–	–	OEL Not Established
4,4'-Diaminodicyclohexyl methane	TLV-TWA	ACGIH	–	–	OEL Not Established

4,4'-Diaminodicyclohexyl methane	REL-CEIL	NIOSH	–	–	OEL Not Established
Glycidoxypropyltrimethoxysilane	IDLH	NIOSH	–	–	IDLH Not Determined
Glycidoxypropyltrimethoxysilane	PEL	OSHA	–	–	OEL Not Established
Glycidoxypropyltrimethoxysilane	TLV-TWA	ACGIH	–	–	OEL Not Established
Glycidoxypropyltrimethoxysilane	REL-CEIL	NIOSH	–	–	OEL Not Established
2-Propoxyethanol	IDLH	NIOSH	–	–	IDLH Not Determined
2-Propoxyethanol	PEL	OSHA	–	–	OEL Not Established
2-Propoxyethanol	TLV-TWA	ACGIH	–	–	OEL Not Established
2-Propoxyethanol	REL-CEIL	NIOSH	–	–	OEL Not Established

Exposure Guidelines

Consult local authorities for acceptable exposure limits.

Personal Protective Equipment (PPE)

Respiratory Protection

When utilizing this material wear a NIOSH approved cartridge respirator or gas mask suitable to keep airborne mists and vapor concentration below the time-weighted threshold limit values. **WHEN USING IN POORLY VENTILATED OR CONFINED SPACES, USE A FRESH-AIR SUPPLYING RESPIRATOR OR A SELF-CONTAINED BREATHING APPARATUS.**

Skin Protection

To prevent repeated or prolonged skin contact, wear appropriate safety garments such as impervious gloves, head/neck covers, aprons, jackets, pants, coveralls, and boots. Drench affected area with water for at least 15 minutes. Wash hands at the end of each work shift and before eating, drinking, using tobacco products, or restroom.

Eye Protection

Chemical splash goggles and face shield in compliance with OSHA regulations are advised for eye protection.

Engineering Controls

Use explosion-proof suction type exhaust fans and blowers with sufficient CFM capacity to keep solvent vapors below 20% of the explosive limit. Provide sufficient mechanical ventilation to maintain exposure below TLV(s).

Provide readily accessible eye wash stations and safety showers.

Other Protective Clothing or Equipment

Use protective barrier creams on exposed skin areas. Discard contaminated leather articles. Remove contaminated clothing; do not allow contaminated clothing out of the workplace.

Work Hygienic Practices

As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, and before eating, drinking, using tobacco products or restrooms. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Viscous white liquid
Odor:	Irritating, ammoniacal
Odor Threshold:	Not available.
pH:	Alkaline.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point and Range:	>392° F (> 200° C)
Flash Point:	>200° F (>93°C) (method: estimated)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Upper/Lower flammability or explosive limits:	Not available.
Vapor Pressure:	< 10.34 mmHg at 70° F (21° C)
Vapor Density:	Not available.
Relative Density (water=1):	1.03
Solubility in water:	<0.1 g/l
Partition coefficient: <i>n</i>- octanol/water:	Not available.

Auto-ignition temperature:	Not available.
Decomposition Temperature:	Not available.
Volatile Organic Compounds (VOC):	0.30 lbs/gal (35.94 g/l)
Percent solids by weight:	98.27
Percent solids by volume:	96.05
Specific Gravity:	2.075 @ 70° F (21° C)
Weight per gallon:	17.32

SECTION 10: STABILITY AND REACTIVITY

Hazardous Polymerization:

None under normal conditions.

Hazardous Decomposition or By-Products

Nitric acid, Ammonia, Nitrogen oxides (NOx), Nitrogen oxide can react with water vapors to form corrosive nitric acid, Carbon monoxide, Carbon dioxide (CO₂), Aldehydes, Flammable hydrocarbon fragments, Nitrosamine, Organic acid vapors.

Chemical Stability

Stable under normal conditions.

Incompatibility (Material to Avoid)

Amines, Incompatible with bases, Reducing agents, Oxidizing agents, Nitrous acid and other nitrosating agents, Organic acids (i.e. acetic acid, citric acid etc.), Mineral acids, Sodium hypochlorite, Reactive metals (e.g. sodium, calcium, zinc etc.), Materials reactive with hydroxyl compounds.

CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological Information

Likely routes of exposure and potential health effects

- Inhalation:** Harmful if inhaled and may cause delayed lung injury. Risk of serious damage to the lungs (by inhalation). May cause nose, throat, and lung irritation. Can cause severe eye, skin, and respiratory tract burns. May cause central nervous system effects, such as headache. Nausea, dizziness, confusion, and/or breathing difficulties. Severe cases of overexposure can result in respiratory failure. Inhalation of vapors and/or aerosols in high concentration may cause irritation of the respiratory system.
- Ingestion:** If ingested, severe burns of the mouth, throat, as well as a danger of perforation of the esophagus and the stomach. May cause central nervous system effects, such as, headache, nausea, vomiting, abdominal pain, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.
- Skin:** Severely irritating to the skin. Causes skin burns. If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Symptoms of overexposure may include headache, tiredness, nausea, and vomiting.
- Eyes:** Causes eye burns, may cause blindness, or severe eye irritation. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. Exposed individuals may see rings around bright lights. This effect is temporary and has no known residual effect. Product vapor can cause glauropsia (corneal edema) when absorbed into the tissue of the eye from the atmosphere.

Acute Toxicity Data

Product/ingredient name	Method	Species	Dose	Exposure	Result
Benzyl alcohol	OECD 401 Oral	Rat	1,610 mg/kg	4 hr	LD ₅₀
Benzyl alcohol	OECD 402 Dermal	Rabbit	2,000 mg/kg	4 hr	LD ₅₀
Benzyl alcohol	OECD 403 Inhalation	Rat	>12.2 mg/l	4 hr	LC ₅₀

Benzyl alcohol	OECD 404 Dermal Irr.	Rabbit	–	–	Not Irritating
Benzyl alcohol	OECD 405 Eyes	Rabbit	–	–	Mild irritant
4,4'-Diaminodicyclohexyl methane	OECD 401 Oral	Rat	>2,000 mg/kg	4 hr	LD ₅₀
4,4'-Diaminodicyclohexyl methane	OECD 402 Dermal	Rabbit	2,110 mg/kg	4 hr	LD ₅₀
4,4'-Diaminodicyclohexyl methane	OECD 403 Inhalation	Rat	–	–	LC ₅₀
4,4'-Diaminodicyclohexyl methane	OECD 404 Dermal Irr.	Rabbit	–	–	Corrosive
4,4'-Diaminodicyclohexyl methane	OECD 405 Eyes	Rabbit	–	–	Irrversible damage
Glycidoxypropyltrimethoxysilane	OECD 401 Oral	Rat	>5,000 mg/kg	4 h	LD ₅₀
Glycidoxypropyltrimethoxysilane	OECD 402 Dermal	Rabbit	6,800 mg/kg	4 h	LD ₅₀
Glycidoxypropyltrimethoxysilane	OECD 403 Inhalation	Rat	>2,700 mg/m ³	4 h	LC ₅₀
Glycidoxypropyltrimethoxysilane	OECD 404 Dermal Irr.	Rabbit	–	–	Mild irritant
Glycidoxypropyltrimethoxysilane	OECD 405 Eyes	Rabbit	–	–	Mild irritant
2-Propoxyethanol	OECD 401 Oral	Rat	3,089 mg/kg	4 h	LD ₅₀
2-Propoxyethanol	OECD 402 Dermal	Rabbit	1,337 mg/kg	4 h	LD ₅₀
2-Propoxyethanol	OECD 403 Inhalation	Rat	>2,132 mg/m ³	6 h	LC ₅₀
2-Propoxyethanol	OECD 404 Dermal Irr.	Rabbit	–	–	Mild irritant
2-Propoxyethanol	OECD 405 Eyes	Rabbit	–	–	Moderate Irritant

OECD: Organization for Economic Cooperation and Development.

OECD Test Method 401: Acute Oral Toxicity. (Following the OECD Council decision, the test 401 'Acute Oral Toxicity' was deleted on 12/07/2002.)

OECD Test Method 420: Acute Oral toxicity – fixed dose procedure.

OECD Test Method 402: Acute Dermal Toxicity.

OECD Test Method 403: Acute Inhalation Toxicity.

OECD Test Method 404: Acute Dermal Irritation/Corrosion.

OECD Test Method 405: Acute Eye Irritation/Corrosion.

Skin corrosion / irritation

No additional data.

Serious eye damage / irritation

No additional data. May cause irreversible eye damage.

Respiratory or skin sensitization

No additional data. Once sensitized, a severe allergic skin reaction may occur when subsequently exposed to very low levels.

Germ cell mutagenicity

No known significant effects or critical hazards on the product itself.

Component	Test	Result
Benzyl alcohol	OECD 473 (<i>in vitro</i>)	Negative
Benzyl alcohol	OECD 474 (<i>in vivo</i>)	Negative
4,4'-Diaminodicyclohexyl methane	OECD 473 (<i>in vitro</i>)	Negative
4,4'-Diaminodicyclohexyl methane	OECD 474 (<i>in vivo</i>)	Negative
Glycidoxypropyltrimethoxysilane	OECD 473 (<i>in vitro</i>)	Negative
Glycidoxypropyltrimethoxysilane	OECD 474 (<i>in vivo</i>)	Negative
2-Propoxyethanol	OECD 473 (<i>in vitro</i>)	No data
2-Propoxyethanol	OECD 474 (<i>in vivo</i>)	No data

OECD: Organization for Economic Cooperation and Development.

LOEL: "Lowest-observed-effect-level".

NOAEL: "No-observed-adverse-effect level".

Carcinogenicity

Component	Classification	Listing Body
Benzyl alcohol	Not Listed	IARC
Benzyl alcohol	No evidence of carcinogenic activity.	NTP
4,4'-Diaminodicyclohexyl methane	Not Listed	IARC

4,4'-Diaminodicyclohexyl methane	Not Listed	NTP
Glycidoxypropyltrimethoxysilane	Not Listed	IARC
Glycidoxypropyltrimethoxysilane	Not Listed	NTP
2-Propoxyethanol	Not Listed	IARC
2-Propoxyethanol	Not Listed	NTP

IARC: World Health Organization's (WHO) International Agency for Research on Cancer.
NTP: U.S. Department of Health and Human Services' (DHHS) National Toxicology Program.

Reproductive toxicity

No known significant effects or critical hazards on the product itself.

Component	Test	Result
Benzyl alcohol	OECD 414	Negative
Benzyl alcohol	OECD 416	Negative
4,4'-Diaminodicyclohexyl methane	OECD 414	NOAEL – 15 mg/kg
4,4'-Diaminodicyclohexyl methane	OECD 416	Positive
Glycidoxypropyltrimethoxysilane	OECD 414	Negative
Glycidoxypropyltrimethoxysilane	OECD 416	Negative
2-Propoxyethanol	OECD 414	Negative
2-Propoxyethanol	OECD 416	Negative

OECD: Organization for Economic Cooperation and Development.
LOEL: "Lowest-observed-effect-level".
NOAEC: "No Observed Adverse Effect Concentration"
NOAEL: "No-observed-adverse-effect level".
OECD Test Method 414: Prenatal Developmental Toxicity
OECD Test Method 415: One-Generation Reproductive Toxicity (Effective Date of Deletion: 12/27/2019.)
OECD Test Method 416: Two-Generation Reproduction Toxicity.
OECD Test Method 421: Reproduction/Developmental Toxicity Screening Test
OECD Test Method 422: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity.

Specific Target Organ Toxicity, Single Exposure (STOT-SE)

Not classified as a STOT-SE hazard.

Specific Target Organ Toxicity, Repeated Exposure (STOT-RE)

Liver, Kidney, Central Nervous System: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Not classified as an aspiration hazard.

Potential chronic health effects

Skin corrosion / irritation

Severely irritating in contact with skin. May cause sensitization by skin contact

Serious eye damage / irritation

May cause irreversible eye damage.

Respiratory or skin sensitization

Once sensitized, a severe allergic skin reaction may occur when subsequently exposed to very low levels.

Component	Test	Endpoint	Species	Result
Benzyl alcohol	OECD 408 (oral)	NOAEL	Rat	400 mg/kg
Benzyl alcohol	OECD 411 (dermal)	LOEL	Rabbit	Not sensitizing
Benzyl alcohol	OECD 413 (inhalation)	NOAEL	Rat	400 mg/kg
4,4'-Diaminodicyclohexyl methane	OECD 408 (oral)	NOAEL	Rat	15 mg/kg
4,4'-Diaminodicyclohexyl methane	OECD 411 (dermal)	NOAEL	Rabbit	Not sensitizing
4,4'-Diaminodicyclohexyl methane	OECD 413 (inhalation)	NOAEL	Rat	96 mg/m ³
Glycidoxypropyltrimethoxysilane	OECD 408 (oral)	NOAEL	Rat	>1,000 mg/kg

Glycidoxypropyltrimethoxysilane	OECD 411 (dermal)	NOAEL	Rat	> 1 ml/kg
Glycidoxypropyltrimethoxysilane	OECD 413 (inhalation)	NOAEL	Rat	1,000 mg/kg
2-Propoxyethanol	OECD 408 (oral)			No data.
2-Propoxyethanol	OECD 411 (dermal)	NOAEL	Rat	222 mg/kg
2-Propoxyethanol	OECD 413 (inhalation)	NOAEL	Rat	41 mg/kg

OECD: Organization for Economic Cooperation and Development

LOAEC: "Lowest-observed-adverse-effect-concentration"

LOEL: "Lowest-observed-effect-level"

NOAEC: "No-observed-adverse-effect-concentration"

NOAEL: "No-observed-adverse-effect level"

OECD Test Method 408: Repeated dose oral toxicity: 90-day study

OECD Test Method 411: Sub-chronic dermal toxicity: 90-day study.

OECD Test Method 413: Sub-chronic Inhalation Toxicity: 90-day Study

SECTION 12: ECOLOGICAL INFORMATION

Environmental affects

No data on the product itself. May be harmful to the environment if released in large quantities. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Ecotoxicity

Aquatic Toxicity

Toxicity to Fish

Product/ingredient name	Test	Species	Dose	Exposure
Benzyl alcohol	LC ₅₀	Lepomis macrochirus (bluegill)	44.6 mg/l	96 h
4,4'-Diaminodicyclohexyl methane	LC ₅₀	Leuciscus idus (golden orfe)	67.8 mg/l	96 h
Glycidoxypropyltrimethoxysilane	LC ₅₀	Lepomis macrochirus (bluegill)	276 mg/l	96 h
2-Propoxyethanol	LC ₅₀	Brachydanio rerio (zebra fish)	4,926 mg/l	96 h

Toxicity to aquatic invertebrates

Product/ingredient name	Test	Species	Dose	Exposure
Benzyl alcohol	EC ₅₀	Daphnia magna (water flea)	400 mg/l	48 h
4,4'-Diaminodicyclohexyl methane	EC ₅₀	Daphnia magna (water flea)	6.8 mg/l	48 h
Glycidoxypropyltrimethoxysilane	EC ₅₀	Daphnia magna (water flea)	710 mg/l	48 h
2-Propoxyethanol	EC ₅₀	Daphnia magna (water flea)	4,622 mg/l	48 h

Toxicity to aquatic algae and cyanobacteria

Product/ingredient name	Test	Species	Dose	Exposure
Benzyl alcohol	EC ₅₀	Scenedesmus quadricauda (green algae)	640 mg/l	96 h
4,4'-Diaminodicyclohexyl methane	EC ₅₀	Scenedesmus subspicatus (green algae)	200 mg/l	72 h
Glycidoxypropyltrimethoxysilane	EC ₅₀	Scenedesmus (green algae)	53 mg/l	72 h
2-Propoxyethanol	EC ₅₀	Scenedesmus (green algae)	> 500 mg/l	72 h

Persistence and degradability

Product/ingredient name	Test	Concentration	Result
Benzyl alcohol	Anaerobic, 28 d	90%	Readily biodegradable
4,4'-Diaminodicyclohexyl methane	Aerobic, 28 d	<10%	Not readily biodegradable
Glycidoxypropyltrimethoxysilane	Hydrolysis 30 – days	65%	Not readily biodegradable
2-Propoxyethanol	Aerobic 20 – days	100%	Readily biodegradable

Bioaccumulative potential

Product/ingredient name	Log K _{ow}	BCF	Potential
Benzyl alcohol	1.87	3.16	Moderate
4,4'-Diaminodicyclohexyl methane	<3	3.2	Low
Glycidoxypropyltrimethoxysilane	-0.9	–	Low

2-Propoxyethanol 1.51 3.16 Low

Mobility in soil

Product/ingredient name

Benzyl alcohol	Moderate mobility
4,4'-Diaminodicyclohexyl methane	Moderate mobility
Glycidoxypropyltrimethoxysilane	No data
2-Propoxyethanol	No data

SECTION 13: DISPOSAL CONSIDERATIONS

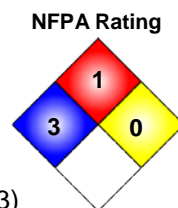
Waste Disposal Method

EMPTY CONTAINERS RETAIN PRODUCT RESIDUE AND CAN BE HAZARDOUS. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE SAFETY DATA SHEET (SDS) MUST BE OBSERVED. Consult local, state, and federal hazardous waste regulators before disposing of waste materials. The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. **DISPOSE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS ONLY.**

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (4,4'-Diaminodicyclohexyl methane solution)
Hazard Class	8
ID Number	UN2735
Packing Group	III
Emergency phone	+1-352-323-3500 (US Toll Free: 800-535-5053)



HMIS	
3*	Health
1	Flammability
0	Physical Hazard
I	Personal Protection



TRANSPORT CANADA

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (4,4'-Diaminodicyclohexyl methane solution)
Hazard Class	8
ID Number	UN2735
Packing Group	III
Emergency phone	+1-352-323-3500 (US Toll Free: 800-535-5053)

IMO/IMDG

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (4,4'-Diaminodicyclohexyl methane solution)
Hazard Class	8
ID Number	UN2735
Packing Group	III
Emergency phone	+1-352-323-3500 (US Toll Free: 800-535-5053)
Marine Pollutant	Yes
Stowage and Handling	Stowage Category: B – “On deck or under deck”
	Stowage Code: None
	Handling Code: None
	Special Provisions: 223, 274
Segregation Codes	SGG18: alkalis
	SG35: Stow “separated from” SGG1 – acids.
Emergency Schedule	EmS Fire Schedule: F – A, “General Fire Schedule”
	EmS Spill Schedule: S – B, “Corrosive Substances”

IATA/DGR

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (4,4'-Diaminodicyclohexyl methane solution)
Hazard Class	8
ID Number	UN2735
Packing Group	III
Emergency phone	+1-352-323-3500 (US Toll Free: 800-535-5053)
Passenger and Cargo Aircraft	Quantity limitation: 1.32 US-Gal (5 L)
	Packaging instruction: 852
	ERG Code: 8L
	Special Provision: A3, A803
Cargo Aircraft Only (CAO)	Quantity limitation: 15.85 US-Gal (60 L)
	Packaging instruction: 856
	Special Provision: A3, A803
	ERG Code: 8L

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Nombre propio del transporte	Aminas, líquido, corrosivos, n.e.p. (Solución de 4,4'-diaminodicyclohexil)
Clase de peligro	8
Número de identificación del	UN2735
Grupo de embalaje	III
teléfono de emergencia	+1-352-323-3500 (US Toll Free: 800-535-5053)

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

U.S. Department of Labor, Occupational Safety & Health Administration (OSHA)

Hazard Communication Standard (HCS) Classification: See Section 2 above

Effective 26 March 2012, OSHA modified its Hazard Communication Standard (HCS), **29 CFR Parts 1910, 1915, and 1926**, to conform to the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Emergency Planning and Community Right-to-Know Act (EPCRA)

42 U.S. Code, Chapter 116

Sections: 302/304 Extremely Hazardous Substances (EHS):

Extremely Hazardous Substances (EHSs), (40 CFR Part 302, Table 302.4)

<u>Ingredient(s)</u>	<u>CAS No.</u>
—	—

311/312 Hazard Categories

Extremely Hazardous Substances (EHSs), (40 CFR Part 355, Appendix A and Appendix B)

Category A:	Immediate (Acute) Health Hazard:	Yes
Category D:	Delayed (Chronic) Health Hazard:	Yes
Category F:	Fire Hazard:	No
Category R:	Reactive Hazard:	No
Category S:	Sudden Release of Pressure Hazard:	No

	<u>Ingredient(s)</u>	<u>CAS No.</u>	<u>Category</u>
	Benzyl alcohol	100-51-6	A, D
	4,4'-Diaminodicyclohexyl methane	1761-71-3	A

***Note:** *The information above is provided for informational purposes only.* No individual chemical in the listing above appears in 40 CFR Part 355, Appendix A or Appendix B.

Section: 313 Toxics Release Inventory (TRI) Reportable Ingredients:

Extremely Hazardous Substances (EHSs), (40 CFR Part 372, Subpart D)

<u>Ingredient(s)</u>	<u>CAS No.</u>	<u>Reportable Quantity (RQ)</u>
-	-	-

Clean Air Act

42 U.S. Code, Chapter 85

Section 111 Volatile Organic Compound (VOC) Content Limits:

40 CFR Part 59, Subpart D, Table 1

Volatile Organic Compounds (VOC): 35.94 g/l, (0.30 lb/gal)

Section 112(b) Hazardous Air Pollutants (HAPs):

42 U.S. Code § 7412 - Hazardous air pollutants

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

Ozone Depleting Substances (ODS):

42 U.S. Code § 7671a - Listing of class I and class II substances

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

State Regulations

USA, CALIFORNIA STATE SAFE DRINKING & TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product does not contain any chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

USA, Louisiana Right-to-Know Hazardous Substance List (RTKHSL) Components:

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

USA, Massachusetts Environmental Policy Act (MEPA), 301 CMR 41.00 components:

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

USA, Michigan Critical Materials Register (CMR) Components:

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

USA, New Jersey Right to Know Hazardous Substance List (RTKHSL) Components:

<u>Ingredient(s)</u>	<u>CAS No.</u>
-	-

USA, Pennsylvania Right-to-Know Hazardous Substance List (RTKHSL) Components:

<u>Ingredient(s)</u>	<u>CAS No.</u>
Benzyl alcohol	100-51-6

PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THIS SAFETY DATA SHEET (SDS) MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

SECTION 16: OTHER INFORMATION

Preparation Information

This Safety Data Sheet (SDS) has been prepared by CORCHEM® Corporation.

Revision: 2-01222020, Product Code: C283-A-0W1

DISCLAIMER: All information contained herein is based upon data obtained from CORCHEM's suppliers and/or recognized technical sources.

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