

Section 1. Product and Company Identification

Product Name	PRECIDIUM™ 645D Resin
Manufacturer	Quantum Technical Services Ltd. (Dba Quantum Chemical) 15 Riel Drive St. Albert, AB, Canada T8N 3Z2 Tel: (780) 458-3355 (non-emergency phone number) Fax: (780) 458-2852 www.quantumchemical.com
Chemical Emergencies	For 24-Hour Emergency call Canutec at 613.996.6666

Section 2. Hazards Identification

OSHA/HCS Status	This material is considered hazardous by OSHA Hazard Communication Standard (29 CFR 1910.1200)
WHMIS Classification	D1B, E.
Classification of the Substance Or Mixture.	Acute Toxicity: Oral – Category 4 Acute Toxicity: Dermal – Category 4 Skin Corrosion/Irritation – Category 1B Serious Eye Damage/Eye Irritation - Category 1 Specific Target Organ Toxicity (repeated exposure) – Category 2 Acute Aquatic Toxicity – Category 1 Chronic Aquatic Toxicity – Category 1

GHS Label Elements

Pictograms:

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Signal Word

Danger

Hazard Statements:

H312 Harmful in contact with skin.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:	<p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P264 Wash with plenty of soap and water thoroughly after handling.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P273 Avoid release to the environment.</p>
Response:	<p>P303+P361+P350 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Gently wash with plenty of soap and water.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.</p> <p>P337+P313 If eye irritation persists: Get medical advice/attention.</p> <p>P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P312 Call a POISON CENTER/doctor if you feel unwell.</p>
Storage:	<p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>
Disposal:	P501: Dispose of contents/containers in accordance with local /regional/national international regulations.

Hazards not otherwise classified.

Emergency Overview

Danger.

Corrosive liquid.

Toxic if absorbed through skin.

Prolonged or repeated contact may result in dermatitis.

Causes skin burns.

Causes eye burns.

May cause respiratory tract irritation.

Ingestion may cause gastric disturbances.

Use with local exhaust ventilation.

Wear NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear protective clothing.

Eye wash fountains must be easily accessible.

Wear full face shield if splashing hazard exists.

Section 3. Composition and Ingredient Information

Ingredients	%	ACGHI TLV	C.A.S. #	LD ₅₀	LC ₅₀
Alpha-(2-Aminomethylethyl)-omega-(2-aminomethylethoxy)-poly(oxy(methyl-1,2 ethanediyl))	45-70	n/a	9046-10-0	Oral, Rat 2885 mg/kg	Inhalation , Rat >0.74 mg/l 8 hrs, no mortality
Benzenediamine,ar,ar—diethyl-Ar-methyl-	10-30	n/a	68479-98-1	Oral, Rat 738 mg/kg Dermal, Rabbit >2000 mg/kg	n/a

Bis(2-ethylhexyl) terephthalate	10 - 30	not established	6422-86-2	Oral LD50(rat) >5,000 mg/kg Dermal LD50 (guinea pig) 20 mL/kg bw	n/a
Butane-1,4-diol	1-5			1500 mg/kg Dermal, Rat >5000 mg/kg	>5.1 mg/l (4 hrs)

No other Ingredients are classified as dangerous

Section 4. First Aid Measures

Eye Contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Obtain immediate medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of soap and water. Remove contaminated clothing. Wash clothing before reuse. Obtain immediate medical attention
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention.
Ingestion	If ingested, dilute with water. Consult a physician. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Section 5. Fire Fighting Measures

Flash Point	234°C. (CC).
Auto Ignition Temperature (C)	330°C.
Upper Explosive Limit	Not available.
Lower Explosive Limit	Not available.
Extinguishing Media	Water fog. Use flooding amounts of water in early stages of fire.
Unusual hazards	Not applicable.
Sensitivity to Mechanical Impact	Not expected to be sensitive to mechanical impact.
Sensitivity to Static Discharge	Not expected to be sensitive to static discharge.
Special Fire Fighting Procedures	Cool fire-exposed containers with water spray. Heat will cause pressure buildup and may cause explosive rupture. Firefighter should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Section 6. Accidental Release Measures

Leak/Spill	Spills should be contained, solidified, and placed in suitable containers for disposal in a licensed facility. Wear respiratory protection and protective clothing. Provide adequate ventilation. This product is an alkaline. Before discharging sewage into treatment plants neutralization is generally required. It can be mechanically removed from water due to insolubility.
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Section 7. Handling and Storage

Handling Procedures	Avoid skin and eye contact. Avoid breathing fumes. Remove contaminated clothing before reuse. Maintain good personal hygiene.
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Storage Needs Store in a cool and dry place, for product integrity. Store in tightly sealed container and protect from moisture and foreign materials. Keep container closed when not in use.

Section 8. Exposure Controls and Personal Protection

Protective Equipment	
Eye/Type	Liquid chemical goggles. Contact lenses should not be worn.
Respiratory/Type	At least an air-purifying respirator equipped with an organic vapor cartridge and particulate pre-filters must be worn.
Gloves/Type	Rubber or plastic gloves. Butyl rubber gloves. Nitrile rubber. A barrier cream. Practice good hygiene; wash thoroughly before handling any food.
Clothing/Type	Wear adequate protective clothes.
Other/Type	Eyewash fountain. Emergency shower should be in close proximity.
Ventilation Requirements	Ventilate adequately.

Section 9. Physical and Chemical Properties

Physical State	Liquid.
Odor	Amine.
Specific Gravity	Approximately 1.1.
Odor Threshold(ppm)	Not applicable.
Vapor Pressure (mm Hg)	0.9 @ 234°C.
Vapor Density (Air=1)	>1.
Evaporation Rate	Non volatile.
Boiling Point	250°C.
pH	10-11.
Solubility in water	1 %.
Freezing Point (° C)	-29°C.

Section 10. Stability and Reactivity

Incompatibility	Acids, isocyanates and oxidizing agents.
Reactivity Conditions	See "incompatibility".
Hazardous products of Decomposition	Carbon Monoxide/Dioxide. NOx.

Section 11. Toxicological Information

No data exists for product itself.

Component Acute Toxicity:

Alpha-(2-Aminomethylethyl)-omega-(2-aminomethylethoxy)-poly(oxy(methyl-1,2 ethanediyl))	Oral, Rat LD50 2885 mg/kg	Inhalation , Rat LC50 >0.74 mg/l 8 hrs, no mortality	Dermal, Rabbit LD50 2980 mg/kg
Benzenediamine,ar,ar—diethyl-Ar-methyl-	Oral, Rat LD50 738 mg/kg	n/a	Dermal, Rabbit LD50 >2000 mg/kg
Butane-1,4-diol	Oral, Rat LD50 1500 mg/kg	Inhalation, Rat LC50 >5.1 mg/l (4 hrs)	Dermal, Rat LD50 >5000 mg/kg

Mutagenicity

Alpha-(2-Aminomethylethyl)
-omega-(2-aminomethylethoxy)
-poly(oxy(methyl-1,2 ethanediyl))

Negative in mammalian cells
or bacteria

Benzenediamine,ar,ar—diethyl-
Ar-methyl-

In Vitro: positive and negative results in bacterial and mammalian cells in the presence of metabolic activation. In Vivo: Mouse micronucleus test: negative. Dominant lethal test: rat, negative.

Butane-1,4-diol

Negative in mammalian cells.

Carcinogenicity

Alpha-(2-Aminomethylethyl)
-omega-(2-aminomethylethoxy)
-poly(oxy(methyl-1,2 ethanediyl))

No data available.

Benzenediamine,ar,ar—diethyl-
Ar-methyl-

Not listed as carcinogenic by ACGIH, IARC, NTP, OSHA.

Butane-1,4-diol

Not listed as carcinogenic by IARC.

Reproductive Toxicity

Alpha-(2-Aminomethylethyl)
-omega-(2-aminomethylethoxy)
-poly(oxy(methyl-1,2 ethanediyl))

No indication of a fertility impairing effect.

Benzenediamine,ar,ar—diethyl-
Ar-methyl-

No effect on reproductive organs in repeated dose studies in rats.

Butane-1,4-diol

No data available.

Teratogenicity

Alpha-(2-Aminomethylethyl)
-omega-(2-aminomethylethoxy)
-poly(oxy(methyl-1,2 ethanediyl))

No indications of a developmental toxic/teratogenic were seen in animal studies.

Benzenediamine,ar,ar—diethyl-
Ar-methyl-

No data available.

Butane-1,4-diol

No data available.

Sensitization:

Alpha-(2-Aminomethylethyl)
-omega-(2-aminomethylethoxy)
-poly(oxy(methyl-1,2 ethanediyl))

No data available.

Benzenediamine,ar,ar—diethyl-
Ar-methyl-

Not sensitizing (guinea pig).

Butane-1,4-diol

Not sensitizing (guinea pig).

Section 12. Ecological Information

No data available for product itself.

Toxicity	Fish	Daphnia	Algae
Alpha-(2-Aminomethylethyl) -omega-(2-aminomethylethoxy) -poly(oxy(methyl-1,2 ethanediyl))	LC 50 (96 h) >15 mg/l Oncorhynchus mykiss	EC50 (48 h) 80 mg/l	
Benzenediamine,ar,ar—diethyl- Ar-methyl-	LC50 (48 h) 200 mg/l	LC50 (48 h) 0.5 mg/l	EC10 (72 h) 54 mg/l
Butane-1,4-diol	LC50 (96 h) >30K mg/l Fathead minnow	EC50 (48 h) 813 mg/l	EC50 500 mg/l

Biodegradability

Alpha-(2-Aminomethylethyl) -omega-(2-aminomethylethoxy) -poly(oxy(methyl-1,2 ethanediyl))	Not readily biodegradable (by OECD criteria).
Benzenediamine,ar,ar—diethyl- Ar-methyl-	Not readily biodegradable.
Butane-1,4-diol	Aerobic, readily biodegradable.

Bioaccumulative Potential

Alpha-(2-Aminomethylethyl) -omega-(2-aminomethylethoxy) -poly(oxy(methyl-1,2 ethanediyl))	No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).
Benzenediamine,ar,ar—diethyl- Ar-methyl-	No information available.
Butane-1,4-diol	No information available.

Mobility in Soil

Alpha-(2-Aminomethylethyl) -omega-(2-aminomethylethoxy) -poly(oxy(methyl-1,2 ethanediyl))	Adsorption to solid phase is not expected.
Benzenediamine,ar,ar—diethyl- Ar-methyl-	The substance is expected to partition primarily to soil and water. Koc = 0.32-551 l/kg (QSAR estimate) Henrys law constant = .
Butane-1,4-diol	No data available.

Section 13. Disposal Considerations

Waste Disposal

In accordance with municipal, provincial and federal regulations. Empty containers must be handled with care due to product residue. Do not heat or cut empty containers with electric or gas torch.

Section 14. Transport Information

T.D.G. Classification Amine, liquid, corrosive, N.O.S., Class 8, UN2735, Packing Group III.

US DOT

Hazard Class 8.

Packing group II.

ID Number UN 2735.

Hazard Label 8.

Proper Shipping Name Amines, Liquid, Corrosive, N.O.S. (contains polyetherdiamine).

Section 15. Regulatory Information

WHMIS Classification Class D, Division 1, Subdivision B (Toxic), Class E (corrosive).

Canadian DSL All components are listed or exempted.

US TSCA Released/listed.

Section 16. Other Information

Revision Date: April 20, 2016.

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