Monobond Hardener (Part B)

SECTION 1. IDENTIFICATION

Product Identifier	Monobond Hardener (Part B)
Other Means of Identification	N/A
Product Family	Epoxy Hardeners
Recommended Use	MONOBOND is a two-component, epoxy-bonding agent. It is recommended for adhering concrete underlayments, concrete toppings and certain composition floors.
Restrictions on Use	This product is designed as part of a system in 2 parts and must be mixed, according to manufacturer's instructions, with the appropriate partner product before use.
Manufacturer / Supplier	R&D Technical Solutions Ltd., 7000 Davand Drive, Mississauga, ON, L5T 1J5, 905-795-9900, www.rdsolutions.ca
Emergency Phone No.	CANUTEC, 1-613-996-6666, 24 HR
Date of Preparation	August 18, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquid - Category 2; Serious eye damage/eye irritation - Category 2A; Specific target organ toxicity (single exposure) - Category 3

GHS Label Elements

Signal Word:
Danger
Hazard Statement(s):
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
Precautionary Statement(s):
Prevention:
P210 Keep away from sparks and open flames.
P233 Keep container tightly closed.
P264 Wash hands and skin thoroughly after handling.
P280 Wear protective gloves/eye protection/face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTRE/doctor if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/attention.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P370 + P378 In case of fire: Use dry chemical powder, appropriate foam, carbon dioxide to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal:
P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Acetone	67-64-1	47-50	-
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	68410-23-1	42-47	-
Triethylenetetramine	112-24-3	4-6	-

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Get medical advice/attention if you feel unwell or are concerned.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. Get medical advice/attention if you feel unwell or are concerned. If skin irritation occurs get medical advice/attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists, get medical advice/attention.

Ingestion

Rinse mouth with water. Get medical advice/attention if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

If on skin: repeated or prolonged exposure can irritate the skin. Symptoms include slight redness and swelling. If in eyes: may cause moderate to severe irritation.

Immediate Medical Attention and Special Treatment

Medical Conditions Aggravated by Exposure

None known.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Special "alcohol resistant fire-fighting foams".

Unsuitable Extinguishing Media

Do not use direct water stream - may cause fire to spread.

Specific Hazards Arising from the Chemical

Extremely flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive

mixture with air. See Section 9 (Physical and Chemical Properties) for flash point and explosive limits. Closed containers may rupture violently when heated releasing contents.
Not known to generate any hazardous decomposition products in a fire.

Special Protective Equipment and Precautions for Fire-fighters

Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere. Dike and recover contaminated water for appropriate disposal.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, if ventilation is not sufficient.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product.

Other Information

Contact supplier, local fire and emergency services for help. Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid repeated or prolonged skin contact. Do not get in eyes, on skin or on clothing. Do not spray on an open flame or other ignition source. Do not pierce or burn container, even after use. Prevent accidental contact with incompatible chemicals. General hygiene considerations: do NOT smoke in work areas. Wash hands thoroughly after handling this material. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Conditions for Safe Storage

Store in an area that is: cool, out of direct sunlight and away from heat and ignition sources. Store in a closed container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	3 mg/m3 Skin					
Triethylenetetramine	3 mg/m3 Skin					
Acetone	250 ppm	500 ppm	750 ppm			

TWA = Time-Weighted Average.

Appropriate Engineering Controls

General ventilation is usually adequate. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles. Wear chemical safety goggles and face shield when contact is possible.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH

approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear colourless - yellow liquid.
Odour	Ammonia-like
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	56.2 ºC (Acetone)
Flash Point	< 5 ºC (closed cup) (estimated) (Acetone)
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	12.8% (Acetone) (upper); 2.5% (Acetone) (lower)
Vapour Pressure	<= 24.7 kPa at 20 ºC (Acetone)
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	> 0.791 (estimated) (Acetone)
Solubility	Not available in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic)

Other Information

Physical State	Liquid
Molecular Formula	Not applicable
Molecular Weight	Not applicable
Saturated Vapour Concentration	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Decomposes violently in the presence of peroxides.

Conditions to Avoid

High temperatures.

Incompatible Materials

Oxidizing agents (e.g. peroxides), metals (e.g. aluminum), organic acids (e.g. acetic acid). Nitrous acid and other nitrosating agents.

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; corrosive, flammable ammonia.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; eye contact.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	Not available	> 2,000 mg/kg (rat)	> 2,000 mg/kg (rabbit)
Triethylenetetramine	Not available	> 2,000 mg/kg (rat)	> 2,000 mg/kg (rabbit)
Acetone	30000-32000 ppm (rat) (4-hour exposure)	1750-6700 mg/kg (rat)	> 7426 mg/kg (rabbit) 24 hours

LC50: No information was located.

LD50 (oral): No information was located.

LD50 (dermal): No information was located.

Skin Corrosion/Irritation

May cause moderate or severe irritation based on information for closely related materials. Symptoms include pain, redness, and swelling. There is limited evidence of skin corrosion.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials. Symptoms include sore, red eyes, and tearing. Causes serious eye damage based on skin corrosion information. May irritate or burn the eyes. Permanent damage including blindness may result.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located. May be harmful based on information for closely related materials. (Acetone)

Skin Absorption

No information was located.

Ingestion

May be harmful based on information for closely related materials. (Triethylenetetramine). (Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines)

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Can cause an allergic reaction (skin sensitization) based on animal tests.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Acetone		A4		

Not known to cause cancer.

Key to Abbreviations

A4 = Not classifiable as a human carcinogen.

Reproductive Toxicity

Development of Offspring

Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

May be mutagenic based on limited evidence. (Triethylenetetramine)

Interactive Effects

No information was located.

No information was located for: Development of Offspring, Sexual Function and Fertility, Effects on or via Lactation, Germ Cell Mutagenicity, Interactive Effects

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Not harmful to fish, aquatic invertebrates, algae, based on acute toxicity tests. (Acetone)

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	Not available			Not available
Triethylenetetramine	Not available			Not available
Acetone	6,100 mg/L (Oncorhynchus mykiss (rainbow trout); 48-hour)	7,630 mg/L (Daphnia magna (water flea); 48-hour)		Not available

Persistence and Degradability

No ingredient of this product or its degradation products is known to be highly persistent.

Bioaccumulative Potential

This product and its degradation products are not known to bioaccumulate.

Mobility in Soil

Studies are not available.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN1993	Flammable Liquids, N.O.S. ((Acetone))	3	II
US DOT	UN1993	Flammable Liquids, N.O.S. ((Acetone))	3	II

Environmental Hazards Not applicable

Special Precautions for User Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

WHMIS Classification

Class B2

Class D2B

B2 - Flammable Liquid; D2B - Toxic (Skin irritant; Eye irritant)

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 1** **Flammability - 3** **Instability - 0** **Based on** Acetone
SDS Prepared By	Compliance & Documentation Coordinator
Phone No.	905-795-9900
Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists IARC = International Agency for Research on Cancer NFPA = National Fire Prevention Association NIOSH = National Institute for Occupational Safety and Health N/A = Not Available
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc. Available from Canadian Centre for Occupational Health and Safety (CCOHS).
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