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Conforms to HCS 2012 - United States

SAFETY DATA SHEET

CRACKBOND® 2100 MV PART A

Section 1. Identification

GHS product identifier : CRACKBOND® 2100 MV PART A

Other means of identification :

Product type :

Relevant identified uses of the substance or mixture and uses advised against

Supplier's details :

Emergency telephone number (with hours of operation) :

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H341 - Suspected of causing genetic defects.
H411 - Toxic to aquatic life with long lasting effects.

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Section 2. Hazards identification

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapor.
P264 - Wash thoroughly after handling.
P272 - Contaminated work clothing must not be allowed out of the workplace.

Response : P391 - Collect spillage.
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : P405 - Store locked up.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification :

Ingredient name	%	CAS number
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, homopolymer	≥65 - ≤90	25085-99-8
1,3-bis(2,3-Epoxypropoxy)-2,2-Dimethylpropane	≤15	17557-23-2
Formaldehyde, Oligomeric Reaction Products with 1-Chloro-2,3-Epoxypropane and Phenol	≤15	9003-36-5
2,3-Epoxypropyl o-tolyl ether	≤5	2210-79-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation. If a generic chemical name is shown and/or the CAS number is not disclosed, the specific chemical identity has been withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

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Section 4. First aid measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No known significant effects or critical hazards.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or 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, or wear gloves.

See toxicological information (Section 11)

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Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any 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. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the 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.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, homopolymer	None.
1,3-bis(2,3-Epoxypropoxy)-2,2-Dimethylpropane	None.
Formaldehyde, Oligomeric Reaction Products with 1-Chloro-2,3-Epoxypropane and Phenol	None.
2,3-Epoxypropyl o-tolyl ether	None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

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Section 8. Exposure controls/personal protection

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, if required, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color :

Odor : Slight.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not available.

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure : Not available.

Relative vapor density : Not available.

Relative density : Not available.

Solubility : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Volatile organic compounds :

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Section 9. Physical and chemical properties and safety characteristics

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,3-bis(2,3-Epoxypropoxy) -2,2-Dimethylpropane	LD50 Oral	Rat	4500 mg/kg	-
2,3-Epoxypropyl o-tolyl ether	LC50 Inhalation Dusts and mists LD50 Oral	Rat Rat	6090 mg/m³ 4 g/kg	4 hours -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Formaldehyde, Oligomeric Reaction Products with 1-Chloro-2,3-Epoxypropane and Phenol	Skin - Mild irritant	Rabbit	-	24 hours 500 µL	-
2,3-Epoxypropyl o-tolyl ether	Skin - Severe irritant	Rabbit	-	24 hours 500 uL	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

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Section 11. Toxicological information

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No known significant effects or critical hazards.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

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

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : Suspected of causing genetic defects.

Reproductive toxicity : No known significant effects or critical hazards.

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Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
1,3-bis(2,3-Epoxypropoxy)-2,2-Dimethylpropane 2,3-Epoxypropyl o-tolyl ether	4500 4000	N/A N/A	N/A N/A	N/A N/A	N/A 6.09

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Formaldehyde, Oligomeric Reaction Products with 1-Chloro-2,3-Epoxypropane and Phenol	2.7	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxirane, 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)] bis-, homopolymer)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxirane, 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)] bis-, homopolymer)
Transport hazard class(es)	-	9	9
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.

AERG : 171

Additional information

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: 2,3-Epoxypropyl o-tolyl ether

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: 1-Chloro-2,3-epoxypropane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

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Section 15. Regulatory information

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
1-Chloro-2,3-epoxypropane	≤0.001	Yes.	1000	101.6	100	10.2

SARA 304 RQ : 50000000 lbs / 22700000 kg

SARA 311/312

Classification : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2

Composition/information on ingredients

Name	%	Classification
Oxirane, 2,2'-[(1-methylethylidene)bis (4,1-phenyleneoxymethylene)] bis-, homopolymer	≥65 - ≤90	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1
1,3-bis(2,3-Epoxypropoxy) -2,2-Dimethylpropane	≤15	SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1
Formaldehyde, Oligomeric Reaction Products with 1-Chloro-2,3-Epoxypropane and Phenol	≤15	SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1
2,3-Epoxypropyl o-tolyl ether	≤5	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 GERM CELL MUTAGENICITY - Category 2

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

⚠ **WARNING**: This product can expose you to 1-Chloro-2,3-epoxypropane, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
1-Chloro-2,3-epoxypropane	Yes.	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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Section 15. Regulatory information

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

United States (TSCA 8b) : All components are active or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
GERM CELL MUTAGENICITY - Category 2	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

History

Date of issue/Date of revision : 07/01/2023

Date of previous issue : 02/07/2022

Version : 3.0

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

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OSHA Hazard Communication Standard 29
CFR 1910.1200. Prepared to GHS Rev 3.

Safety Data Sheet

CRACKBOND® 2100 MV Part B

SECTION 1: Identification

Product identifier used on the label:
Product Name: **CRACKBOND® 2100 MV Part B**

Other means of identification:
Product Code Number: Not available
Synonyms: CRACKBOND® 2100 MV Hardener

Recommended use of the chemical and restrictions on use:
Recommended use: Bonding adhesive.
Recommended restrictions: Uses other than as recommended above

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Company Name: Adhesives Technology Corp.
Company Address: 450 East Copans Road
Pompano Beach, FL 33064, USA
Company Telephone: (800) 892-1880
Company Contact Email: atcinfo@atcepoxy.com

Emergency phone number: CHEM-TEL (800) 255-3924 24/7

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:
Physical hazards
None known

Health hazards
Skin corrosion/irritation, category 1A
Skin sensitization, category 1
Eye damage, category 1
Carcinogenicity, category 1A
Specific target organ toxicity, repeated exposure, category 1

Environmental hazards
Not adopted under OSHA paragraph (d) of §1910.1200

GHS Signal word: DANGER

GHS Hazard statement(s): Causes severe skin burns and eye damage
May cause an allergic skin reaction

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May cause cancer
Causes damage to organs through prolonged or repeated exposure

GHS Hazard symbol(s):

GHS Precautionary statement(s):

Prevention:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust/fume/gas/mist/ vapors/spray.
- Wash thoroughly after handling.
- Contaminated work clothing must not be allowed out of the workplace
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection

Response:

- If swallowed: Rinse mouth. Do NOT induce vomiting.
- If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- If inhaled: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a poison center/doctor.
- If exposed or concerned: Get medical advice/attention.
- Specific treatment (see sections 4 to 8 on this SDS and any further information on the label).
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

Storage:

- Store locked up

Disposal:

- Dispose of contents/container to an approved disposal site in accordance with local/regional/national/ international regulations

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Hazard(s) not otherwise classified (HNOC):
None known.

Percentage of ingredient(s) of unknown acute toxicity:
49% of the mixture consists of ingredients of unknown acute toxicity (dermal/inhalation).

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Crystalline Silica, quartz	14808-60-7	40 - 50%
2-Methylpentamethylenediamine	15520-10-2	10 - 20%
Polyether Amine	proprietary	5 - 10%
Proprietary silane	proprietary	< 1%

Note 1: The balance of the ingredients is not classified as hazardous or are below the concentration limit to be classified as hazardous, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Note 2: The CAS number has been withheld in accordance with the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Seek medical advice.

Skin contact: Remove contaminated clothing. Wash with water and soap and rinse thoroughly. Seek medical advice if irritation or pain develops.

Eye contact: In case of eye contact, rinse with plenty of water for at least 15 minutes. If irritation from exposure to vapor develops, move to fresh air. Get medical attention if symptoms develop.

Ingestion: Do NOT induce vomiting. Get medical attention immediately. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

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Most important symptoms/effects, acute and delayed:
Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed:
If any symptoms are observed, contact a physician and give them this SDS sheet. Provide general supportive measures and treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media:
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Not expected to be flammable. Use extinguishing media suitable for the surrounding area.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):
Not expected to be flammable. In the case of a fire, consider the surrounding area. Hazardous combustion products may include the following substances: Carbon monoxide, Carbon dioxide (CO2), Nitrous gases (NOx), Hazardous organic compounds.

Special protective equipment and precautions for fire-fighters:
Wear self-contained breathing apparatus and protective clothing. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).
Keep out of drains, surface waters and soil against pollution.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:
No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away from and upwind of spill/leak. Wear appropriate personal protective equipment (refer to Section 8 Exposure controls/ personal protection) and avoid inhalation or contact with eyes and skin.

Methods and materials for containment and cleaning up:
Large Spills: Stop the flow of material, if safe to do so. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Small Spills: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

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Precautions for safe handling:
Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibles:
Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

	US OSHA PELs		US ACGIH TLVs		NIOSH OELs	
Substance	**TWA (8 hour)**	**STEL (15 min)**	**TWA (8 hour)**	**STEL (15 min)**	**IDLH**	**TWA (8hr)**
Crystalline Silica, quartz	Final PEL - 50 µg/m3 (listed under Respirable crystalline silica) Table Z-3 Mineral dusts - (250)/ (%SiO2 + 5) mppcf, respirable fraction; (10)/ (%SiO2 + 2) mg/m3, respirable fraction	No data available	0.025 mg/m3 (respirable particulate matter)	No data available	50 mg/m3 (respirable dust)	0.05 mg/m3 (respirable dust)
2-Methylpenta methylene diamine	No data available	No data available	No data available	No data available	No data available	No data available
Polyether Amine	No data available	No data available	No data available	No data available	No data available	No data available
Proprietary silane	No data available	No data available	No data available	No data available	No data available	No data available

Appropriate engineering controls:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.
If exposure limits have not been established, maintain airborne levels to an acceptable level.

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Provide eyewash station. Eye wash fountain and emergency showers are recommended. Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear safety glasses with side shields (or goggles). Use equipment for eye protection tested and approved under NIOSH standards.

Skin and hand protection: Wear appropriate chemical resistant gloves. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. The selected protective gloves have to satisfy the specifications of ASTM F739.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a chemical respirator with organic vapor cartridge and full facepiece. Use respirators and components tested and approved under appropriate government standards such as NIOSH).

General hygiene considerations: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wash hands after use.

SECTION 9: Physical and chemical properties

Appearance (physical state, color, etc.):

Physical state:	Viscous Liquid
Color:	Gray
Odor:	Ammoniacal
Odor threshold:	Not determined
pH:	Not applicable
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not applicable
Flash point:	Not applicable
Evaporation rate:	Not applicable

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Flammability (solid, gas):	Not expected to be flammable
Upper/lower flammability or explosive limits	
Flammability limit – lower %):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	Not applicable
Vapor density:	Not applicable
Relative density:	Not determined
Solubility (ies):	Not determined
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not applicable
Decomposition temperature:	Not applicable
Viscosity:	Not applicable
Volatile organic compounds:	Not determined

SECTION 10: Stability and reactivity

Reactivity:	No hazardous reactions anticipated under normal storage and handling conditions.
Chemical stability:	Stable under normal ambient and anticipated conditions of use
Possibility of hazardous reactions:	Hazardous polymerization may occur.
Conditions to avoid:	Avoid high temperatures. Contact with incompatible materials.
Incompatible materials:	Materials to avoid include Strong acids, Strong bases, Strong oxidizers.
Hazardous decomposition Products:	Carbon monoxide, Carbon dioxide (CO2), Nitrous gases (NOx), Hazardous organic compounds.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Expected to be a route of exposure

Ingestion: Expected to be a route of exposure

Skin: Expected to be a route of exposure

Eyes: Expected to be a route of exposure

Symptoms related to the physical, chemical, and toxicological characteristics:
Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.

Delayed and immediate effects and chronic effects from short or long-term exposure:

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May cause cancer.

Numerical measures of toxicity (such as acute toxicity estimates):

Ingredient Information:

Substance	Test Type (species)	Value
Crystalline Silica, quartz	LD_{50} Oral (Rat)	500 mg/kg
	LD_{50} Dermal (Rabbit)	None known
	LC_{50} Inhalation (Rat)	None known
2-Methylpentamethylene diamine	LD_{50} Oral (Rat)	1170 mg/kg
	LD_{50} Dermal (Rabbit)	1870 mg/kg
	LC_{50} Inhalation (Rat)	4.9 mg/l/1h
Polyether Amine	LD_{50} Oral (Rat)	2885.3 mg/kg
	LD_{50} Dermal (Rabbit)	2979.7 mg/kg
	LC_{50} Inhalation (Rat)	>0.74 mg/l vapor
Proprietary silane	LD_{50} Oral (Rat)	1800 mg/kg
	LD_{50} Dermal (Rabbit)	None known
	LC_{50} Inhalation (Rat)	None known

Skin corrosion/irritation: Causes severe skin burns.

Serious eye damage/eye irritation: Causes serious eye damage

Respiratory or skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: Not expected to cause genetic defects.

Carcinogenicity: May cause cancer.

Reproductive toxicity: Not expected to damage fertility or the unborn child.

STOT – Single exposure: Not expected to cause specific target organ toxicity after a single exposure.

STOT – Repeat exposure: Not expected to cause specific target organ toxicity after prolonged or repeated exposure.

Aspiration hazard: This product is not anticipated to be an aspiration hazard if swallowed.

If the hazardous chemical is listed in the National Toxicology Program (NTP) Report on

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Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA:

Chemical Name	ACGIH	IARC	NTP	OSHA
Crystalline Silica, quartz	A2 - Suspected Human Carcinogen	Monograph 100C [2012] (listed under Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources); Monograph 68 [1997]	Known Human Carcinogen (listed under Silica, crystalline (respirable size))	Present
2-Methylpentamethylene diamine	Not listed	Not listed	Not listed	Not listed
Polyether Amine	Not listed	Not listed	Not listed	Not listed
Proprietary silane	Not listed	Not listed	Not listed	Not listed

SECTION 12: Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Product data: Toxic to aquatic life with long lasting effects

Ingredient Information:

Substance	Test Type	Species	Value
Crystalline Silica, quartz	LC_{50}	Fish	None known
	EC_{50}	Invertebrates	None known
	EC_{50}	Algae	None known
2-Methylpentamethylenediamine	LC_{50}	Fish	1825 mg/L
	EC_{50}	Invertebrates Daphnia magna	19.8 mg/L 48h
	EC_{50}	Algae	> 100 mg/L 72h
Polyether Amine	LC_{50}	Fish	772.14 mg/L 96h
	EC_{50}	Invertebrates Daphnia magna	418.34 mg/L 48h
	ErC_{50}	Algae	15 mg/L 72h

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Proprietary silane	LC_{50}	Fish	None known
	EC_{50}	Invertebrates	None known
	EC_{50}	Algae	None known

Persistence and Degradability:
Not determined

Bioaccumulative Potential:
Not determined

Mobility in Soil:
Not determined.

Other adverse effects (such as hazardous to the ozone layer):
Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Product
Dispose of waste materials in accordance with applicable local and national laws and regulations. Where possible, recycling is preferred to disposal or incineration. Contact the proper local authorities.

Contaminated packaging
Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)
UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (contains 2-Methylpentamethylene diamine), 8, III.

IMDG (Transport by sea)
UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (contains 2-Methylpentamethylene diamine), 8, III.

IATA (Country variations may apply)
UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (contains 2-Methylpentamethylene diamine), 8, III.

Environmental hazards
Marine pollutant: Yes

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

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Not applicable

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
None known

SECTION 15: Regulatory Information

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is classified as hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All of the ingredients are listed on the U.S. EPA TSCA Inventory List.

Emergency Planning and Community Right To-Know Act (EPCRA)
Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370 (amended 2018)):
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals (40 CFR 372.65):
None of the components are listed

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: Crystalline Silica, quartz is listed as a carcinogen, 10/1/1988 (airborne particles of respirable size).

Massachusetts Right to Know: Crystalline Silica, quartz is listed on the Massachusetts Right to Know list.

New Jersey Right to Know Crystalline Silica, quartz is listed on the New Jersey Right to Know List.

Pennsylvania Right to Know: Crystalline Silica, quartz is listed on the Pennsylvania Right to Know List.

SECTION 16: Other Information

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Revision Date: 07/09/2023

Version: 2.0

DISCLAIMER:
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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