



CRACKBOND CSR Part A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/14/2023 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : CRACKBOND CSR Part A

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Adhesives Technology Corporation
450 East Copans Road
Pompano Beach, Florida 33064
USA
T (800) 892-1880 - F (800) 362-3320
www.atcepoxy.com

1.4. Emergency telephone number

Emergency number : 800-255-3924
Operating hours 24 hours / 24 hours, 7 days a week

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Respiratory sensitization, Category 1	H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Carcinogenicity Category 2	H351	Suspected of causing cancer
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation
Specific target organ toxicity (repeated exposure) Category 2	H373	May cause damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment – Acute Hazard Category 2	H401	Toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 3	H412	Harmful to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)
Hazard statements (GHS US)

: Danger
: H315 - Causes skin irritation
: H317 - May cause an allergic skin reaction

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Precautionary statements (GHS US)

H319 - Causes serious eye irritation
 H332 - Harmful if inhaled
 H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled
 H335 - May cause respiratory irritation
 H351 - Suspected of causing cancer
 H361 - Suspected of damaging fertility or the unborn child
 H373 - May cause damage to organs through prolonged or repeated exposure
 H401 - Toxic to aquatic life
 H412 - Harmful to aquatic life with long lasting effects
 : P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264 - Wash hands, forearms and face thoroughly after handling.
 P271 - Use only outdoors or in a well-ventilated area.
 P272 - Contaminated work clothing must not be allowed out of the workplace.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P284 - [In case of inadequate ventilation] wear respiratory protection.
 P302+P352 - If on skin: Wash with plenty of water.
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
 P304+P341 - If inhaled: If breathing is difficult, 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.
 P308+P313 - If exposed or concerned: Get medical advice/attention.
 P312 - Call a poison center or doctor if you feel unwell.
 P314 - Get medical advice/attention if you feel unwell.
 P321 - Specific treatment (see supplemental first aid instruction on this label).
 P332+P313 - If skin irritation occurs: Get medical advice/attention.
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 - If eye irritation persists: Get medical advice/attention.
 P342+P311 - If experiencing respiratory symptoms: Call a poison center or doctor.
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P363 - Wash contaminated clothing before reuse.
 P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
 P405 - Store locked up.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Name	Product identifier	%	GHS US classification
diphenylmethanediisocyanate, isomeres and homologues	CAS-No.: 9016-87-9	≥ 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373
Diphenylmethane 4,4'-diisocyanate	CAS-No.: 101-68-8	≥ 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
TRIMETHYL PENTANYL DIISOBUTYRATE	CAS-No.: 6846-50-0	10 – 60	Aquatic Acute 2, H401 Aquatic Chronic 3, H412
o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate	CAS-No.: 5873-54-1	1 – 10	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate	CAS-No.: 2536-05-2	< 5	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause respiratory irritation. May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

diphenylmethanediisocyanate, isomers and homologues (9016-87-9)

No additional information available

Diphenylmethane 4,4'-diisocyanate (101-68-8)

USA - ACGIH - Occupational Exposure Limits

Local name	Methylene bisphenyl isocyanate (MDI)
ACGIH OEL TWA [ppm]	0.005 ppm
Remark (ACGIH)	TLV® Basis: Resp sens
Regulatory reference	ACGIH 2022

USA - OSHA - Occupational Exposure Limits

Local name	Methylene bisphenyl isocyanate (MDI)
OSHA PEL C	0.2 mg/m³
OSHA PEL C [ppm]	0.02 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

TRIMETHYL PENTANYL DIISOBUTYRATE (6846-50-0)

No additional information available

o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate (5873-54-1)

No additional information available

2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate (2536-05-2)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

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8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: dark brown
Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Stuffy odour Mild odour Characteristic odour
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 207.78 °C
Flash point	: 198.89 °C Closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: < 0.000013 kPa @ 77F
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
 Acute toxicity (dermal) : Not classified
 Acute toxicity (inhalation) : Harmful if inhaled.

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ATE US (dust, mist)	1.5 mg/l/4h
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diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)

LD50 oral rat	> 10000 mg/kg (Rat, Literature study, Oral)
LD50 oral	10000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Literature study, Dermal)
LD50 dermal	9400 mg/kg
LC50 Inhalation - Rat (Dust/Mist)	0.49 mg/l/4h
LC50 Inhalation - Rat (Vapours)	0.49 mg/l Source: Corporate Solution From Thomson Micromedex
ATE US (oral)	10000 mg/kg body weight
ATE US (dermal)	9400 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	0.49 mg/l/4h
ATE US (dust, mist)	0.49 mg/l/4h

Diphenylmethane 4,4'-diisocyanate (101-68-8)

LD50 oral rat	> 2000 mg/kg body weight (Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 oral	31600 mg/kg

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Diphenylmethane 4,4'-diisocyanate (101-68-8)	
LD50 dermal rabbit	> 9400 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	0.369 mg/l/4h
ATE US (oral)	31600 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	0.369 mg/l/4h
o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate (5873-54-1)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate (2536-05-2)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
Skin corrosion/irritation	: Causes skin irritation.
diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)	
pH	No data available in the literature
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
pH	7 (6.8E-3 g/l, 25 °C)
Serious eye damage/irritation	: Causes serious eye irritation.
diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)	
pH	No data available in the literature
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
pH	7 (6.8E-3 g/l, 25 °C)
Respiratory or skin sensitization	: May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)	
IARC group	3 - Not classifiable
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: May cause respiratory irritation.
diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)	
STOT-single exposure	May cause respiratory irritation.

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Diphenylmethane 4,4'-diisocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.
o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-single exposure	May cause respiratory irritation.
2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate (2536-05-2)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate (2536-05-2)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Viscosity, kinematic	No data available in the literature
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
Viscosity, kinematic	Not applicable (solid)
Symptoms/effects after inhalation	: May cause respiratory irritation. May cause an allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
LC50 - Other aquatic organisms [1]	> 1000 mg/l (96 h, Literature study)
Diphenylmethane 4,4'-diisocyanate (101-68-8)	
LC50 - Fish [1]	> 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Read-across, Nominal concentration)
EC50 - Crustacea [1]	129.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)

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12.2. Persistence and degradability

diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)

Not rapidly degradable

Persistence and degradability	Not readily biodegradable in water.
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Diphenylmethane 4,4'-diisocyanate (101-68-8)

Not rapidly degradable

Persistence and degradability	Not readily biodegradable in water.
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12.3. Bioaccumulative potential

diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)

BCF - Fish [1]	268.1 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
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Partition coefficient n-octanol/water (Log Pow)	10.46 (Calculated, KOWWIN)
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Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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Diphenylmethane 4,4'-diisocyanate (101-68-8)

BCF - Fish [1]	92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 4 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, GLP)
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Partition coefficient n-octanol/water (Log Pow)	4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)
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Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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12.4. Mobility in soil

diphenylmethanediisocyanate, isomeres and homogues (9016-87-9)

Surface tension	No data available in the literature
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Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.078 – 10.597 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
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Ecology - soil	Adsorbs into the soil.
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Diphenylmethane 4,4'-diisocyanate (101-68-8)

Surface tension	No data available in the literature
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Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.455 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
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Ecology - soil	Adsorbs into the soil.
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12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

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SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN3082
 UN-No. (TDG) : Not applicable
 UN-No. (IMDG) : Not applicable
 UN-No. (IATA) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. (Diphenylmethane 4,4'-diisocyanate)
 Proper Shipping Name (TDG) : Not applicable
 Proper Shipping Name (IMDG) : Not applicable
 Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 9
 Hazard labels (DOT) : 9



TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : III
 Packing group (TDG) : Not applicable
 Packing group (IMDG) : Not applicable
 Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN3082

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DOT Special Provisions (49 CFR 172.102)

: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.

146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.

173 - An appropriate generic entry may be used for this material.

335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s." UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx)

: Reportable quantity 12253.9 lbs / 5563.7 kg [1185.3 gal / 4486.9 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

DOT Packaging Non Bulk (49 CFR 173.xxx)

: Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5L or ≤5kg.

DOT Packaging Bulk (49 CFR 173.xxx)

: 241

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)

: No Limit

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

: No Limit

DOT Vessel Stowage Location

: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

TDG

Emergency Response Guide (ERG) Number

: 171

IMDG

No data available

IATA

No data available

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

Not applicable

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SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

TRIMETHYL PENTANYL DIISOBUTYRATE	CAS-No. 6846-50-0	10 – 60%
o-(p-isocyanatobenzyl)phenyl isocyanate, diphenylmethane-2,4'-diisocyanate	CAS-No. 5873-54-1	1 – 10%
2,2'-methylenediphenyl diisocyanate, diphenylmethane-2,2'-diisocyanate	CAS-No. 2536-05-2	< 5%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

diphenylmethanediisocyanate, isomeres and homologues	CAS-No. 9016-87-9	≥ 30%
Diphenylmethane 4,4'-diisocyanate	CAS-No. 101-68-8	≥ 30%

Diphenylmethane 4,4'-diisocyanate (101-68-8)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	5000 lb
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15.2. International regulations

CANADA

diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)

Listed on the Canadian DSL (Domestic Substances List)

Diphenylmethane 4,4'-diisocyanate (101-68-8)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Diphenylmethane 4,4'-diisocyanate (101-68-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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Component	State or local regulations
diphenylmethanediisocyanate, isomers and homologues (9016-87-9)	U.S. - New Jersey - Right to Know Hazardous Substance List
Diphenylmethane 4,4'-diisocyanate (101-68-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



CRACKBOND CSR Part B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/14/2023 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : CRACKBOND CSR Part B

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Adhesives Technology Corporation
450 East Copans Road
Pompano Beach, Florida 33064
USA
T (800) 892-1880 - F (800) 362-3320
www.atcepoxy.com

1.4. Emergency telephone number

Emergency number : 800-255-3924
Operating hours 24 hours / 24 hours, 7 days a week

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child
Specific target organ toxicity (single exposure) Category 2	H371	May cause damage to organs
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US)	: Warning
Hazard statements (GHS US)	: H319 - Causes serious eye irritation H361 - Suspected of damaging fertility or the unborn child H371 - May cause damage to organs
Precautionary statements (GHS US)	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection. 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+P311 - If exposed or concerned: Call a poison center or doctor. P308+P313 - If exposed or concerned: Get medical advice/attention.

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P337+P313 - If eye irritation persists: Get medical advice/attention.

P405 - Store locked up.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	CAS-No.: 6846-50-0	10 – 60	Repr. 2, H361 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Ethanol, 2,2'-oxybis-	CAS-No.: 111-46-6	5 – 30	Acute Tox. 4 (Inhalation:dust,mist), H332 Repr. 2, H361
1,2-dimethylimidazole	CAS-No.: 1739-84-0	1 – 10	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
 First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
 First-aid measures after skin contact : Wash skin with plenty of water.
 First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
 First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

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2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)

No additional information available

Ethanol, 2,2'-oxybis- (111-46-6)

No additional information available

1,2-dimethylimidazole (1739-84-0)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Black
Odor	: slight
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 129.44 °C [Tagliabue]
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: 0.013 kPa @ 25C
Relative vapor density at 20°C	: ≤ 1.02
Relative density	: 1.015 – 1.02
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available

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Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
LD50 oral rat	> 2000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)
LD50 oral	3200 mg/kg
LD50 dermal rabbit	> 2000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
LD50 dermal	18900 mg/kg
LC50 Inhalation - Rat (Dust/Mist)	7.95 mg/l/4h
ATE US (oral)	3200 mg/kg body weight
ATE US (dermal)	18900 mg/kg body weight

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2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
ATE US (dust, mist)	7.95 mg/l/4h
Ethanol, 2,2'-oxybis- (111-46-6)	
LD50 oral rat	16500 mg/kg body weight (Rat, Male / female, Experimental value, Oral, 5 day(s))
LD50 oral	15600 mg/kg
LD50 dermal rabbit	13300 mg/kg body weight (Rabbit, Experimental value, Dermal, 14 day(s))
LD50 dermal	13300 mg/kg
LC50 Inhalation - Rat	> 4.6 mg/l air (Other, 4 h, Rat, Weight of evidence, Inhalation (aerosol), 14 day(s))
ATE US (oral)	15600 mg/kg body weight
ATE US (dermal)	13300 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h
1,2-dimethylimidazole (1739-84-0)	
ATE US (oral)	500 mg/kg body weight
Skin corrosion/irritation	: Not classified
2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
pH	No data available in the literature
Ethanol, 2,2'-oxybis- (111-46-6)	
pH	5 – 8 (50 %)
Serious eye damage/irritation	: Causes serious eye irritation.
2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
pH	No data available in the literature
Ethanol, 2,2'-oxybis- (111-46-6)	
pH	5 – 8 (50 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Ethanol, 2,2'-oxybis- (111-46-6)	
NOAEL (chronic,oral,animal/male,2 years)	1210 mg/kg body weight Animal: rat, Animal sex: male, Remarks on results: other:Effect type: carcinogenicity (migrated information)
NOAEL (chronic,oral,animal/female,2 years)	1160 mg/kg body weight Animal: rat, Animal sex: female, Remarks on results: other:Effect type: carcinogenicity (migrated information)
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: May cause damage to organs.
STOT-repeated exposure	: Not classified
Ethanol, 2,2'-oxybis- (111-46-6)	
LOAEL (oral, rat, 90 days)	40000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
Viscosity, kinematic	No data available in the literature

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Ethanol, 2,2'-oxybis- (111-46-6)	
Viscosity, kinematic	No data available in the literature
Symptoms/effects after eye contact	: Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
LC50 - Fish [1]	18 mg/l
EC50 - Crustacea [1]	> 1.46 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 7.49 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	8 mg/l
LOEC (chronic)	1.3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.7 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic crustacea	3.2 mg/l
Ethanol, 2,2'-oxybis- (111-46-6)	
LC50 - Fish [1]	75200 mg/l (96 h, Pimephales promelas, Flow-through system, Experimental value, Lethal)
EC50 - Crustacea [1]	> 10000 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 96h - Algae [1]	6500 – 13000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [2]	9362 mg/l Test organisms (species): other:green algae
NOEC (chronic)	≥ 1000 mg/l Test organisms (species): Americamysis bahia (previous name: Mysidopsis bahia) Duration: '23 d'

12.2. Persistence and degradability

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.
ThOD	2.4 g O ₂ /g substance
Ethanol, 2,2'-oxybis- (111-46-6)	
Not rapidly degradable	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance
ThOD	1.51 g O ₂ /g substance

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12.3. Bioaccumulative potential

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
BCF - Fish [1]	5340 (OECD 305: Bioconcentration: Flow-Through Fish Test, 23 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	4.11 Source: OECD Screening Information Data Set
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

Ethanol, 2,2'-oxybis- (111-46-6)

BCF - Fish [1]	100 l/kg (3 day(s), Leuciscus melanotus, Static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	-1.98 (Calculated)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)	
Surface tension	27.8 mN/m (22 °C, 100 vol %, EU Method A.5: Surface tension)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.6 (log Koc, QSAR)
Ecology - soil	Low potential for mobility in soil.

Ethanol, 2,2'-oxybis- (111-46-6)

Surface tension	48.5 mN/m
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

No data available

TDG

No data available

IMDG

No data available

IATA

No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

1,2-dimethylimidazole	CAS-No. 1739-84-0	1 – 10%
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15.2. International regulations

CANADA

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)

Listed on the Canadian DSL (Domestic Substances List)

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Ethanol, 2,2'-oxybis- (111-46-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

2,2,4-trimethyl-1,3-pentanediol diisobutyrate (6846-50-0)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Ethanol, 2,2'-oxybis- (111-46-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Ethanol, 2,2'-oxybis-(111-46-6)	U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases

H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

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