



QuakeBond™ 220UR Part B (Epoxy Hardener)

Safety Data Sheet

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

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Name : QuakeBond™ 220UR Part B
CAS No : none - mix
Product code : 50263

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

Use of the substance/mixture : Epoxy resin: hardener

1.3. Details of the supplier of the safety data sheet

QuakeWrap, Inc
6840 S Tucson Blvd
Tucson, Arizona 85756 - USA
T 520.791.7000 - F 520.791.0600
Office@quakewrap.com – Quakewrap.com

1.4. Emergency telephone number

Emergency number : Infotrac 800-535-5053

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315 - Causes skin irritation
Eye Dam. 1 H318 - Causes serious eye damage
Skin Sens. 1 H317 - May cause an allergic skin reaction

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage

Precautionary statements (GHS-US) :

P261 - Avoid breathing mist/vapors/spray
P264 - Wash all contact areas thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection.
P302+P352 - If on skin: Wash with plenty of mild soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to special waste facility in accordance with regional/national regulations.

2.3. Other hazards

No additional information available

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Benzyl Alcohol	(CAS No) 100-51-6	< 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:vapour), H332 Eye Irrit. 2B, H320
TETA/Propylene oxide reaction products	(CAS No) 26950-63-0 TS	< 50	Skin Sens. 1B, H317
Aliphatic polyamines	(CAS No) UNKNOWN	< 50	Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317
1,2-Cyclohexanediamine	(CAS No) 694-83-7	< 50	Flam. Liq. 4, H227 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317
Triethylenetetramine	(CAS No) 112-24-3	< 50	Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.
- First-aid measures after skin contact : If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Dispose of contaminated leather articles. Keep work clothing separately. Cool skin rapidly with cold water after contact with hot product.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. Direct contact with the eyes is likely to be irritating.
- First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Symptoms may be delayed.
- Symptoms/injuries after inhalation : Vapors from heated material may cause mild respiratory irritation with dryness and cough. Shortness of breath.
- Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Inflammation/damage of the eye tissue. Swelling and conjunctivitis.
- Symptoms/injuries after ingestion : Gastrointestinal complaints. Nausea.
- Chronic symptoms : No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Irritating and/or toxic gases or fumes likely if involved in fire or exposed to extreme heat.
- Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers.
- Protection during firefighting : Complete protective clothing. Self-contained breathing apparatus.
- Other information : Combustion produces toxic gases.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective goggles. Rubber apron, boots.
Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Impermeable boots and protective equipment. Protective gloves.
Emergency procedures : Stop leak if safe to do so. Ventilate area. Evacuate and limit access.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Prevent soil and water pollution.

6.3. Methods and material for containment and cleaning up

For containment : Dam up the liquid spill.
Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Clean contaminated surfaces with a soap solution.
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

Additional hazards when processed : When heated, material emits irritating fumes.
Precautions for safe handling : Avoid breathing mist/vapors/spray. Avoid contact with skin and eyes.
Hygiene measures : Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Heat sources. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Maximum storage period : 12 months
Storage temperature : ≥ 10 °C
Storage area : Keep out of direct sunlight. Store in a cool area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Materials for protective clothing : butyl rubber. chloroprene rubber. nitrile rubber.
Hand protection : protective gloves.
Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Long sleeved protective clothing. Use insulated gloves when handling this material hot.
Respiratory protection : On heating: gas mask with filter type A.
Thermal hazard protection : Use insulated gloves when handling this material hot.
Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : Mixture contains one or more component(s) which have the following color(s):
Colorless
Odor : Odorless. Mild nondescript

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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	: 100 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: < 1 mm Hg @ 20 deg C
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 1.24 g/cm ³
Solubility	: Poorly soluble in water. Water: Solubility in water of component(s) of the mixture : • : 4.4 g/100ml (50 °C) • : soluble • : Complete • : 0.15 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 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

Overheating. Water, humidity.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Hazardous decomposition products may be released during prolonged heating like smoke, carbon monoxide and dioxide, nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Benzyl Alcohol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Inconclusive, insufficient data)
ATE US (oral)	1620.000 mg/kg body weight
ATE US (vapors)	11.000 mg/l/4h
1,2-Cyclohexanediamine (694-83-7)	
LD50 oral rat	4556 mg/kg (Rat)

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1,2-Cyclohexanediamine (694-83-7)	
LC50 inhalation rat (mg/l)	> 4.5 mg/l/4h (Rat)
ATE US (oral)	4556.000 mg/kg body weight

Triethylenetetramine (112-24-3)	
LD50 oral rat	2500 mg/kg (Rat; Literature; 1716 mg/kg bodyweight; Rat; Literature)
LD50 dermal rabbit	805 mg/kg (Rabbit; Literature; 1465 mg/kg bodyweight; Rabbit; Literature)
ATE US (oral)	2500.000 mg/kg body weight
ATE US (dermal)	805.000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: Vapors from heated material may cause mild respiratory irritation with dryness and cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Causes serious eye irritation. Inflammation/damage of the eye tissue. Swelling and conjunctivitis.
Symptoms/injuries after ingestion	: Gastrointestinal complaints. Nausea.
Chronic symptoms	: No effects known.

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.

Benzyl Alcohol (100-51-6)	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)

Triethylenetetramine (112-24-3)	
EC50 Daphnia 1	311 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna)
LC50 fish 2	495 mg/l (LC50; 96 h; Pimephales promelas)
Threshold limit algae 1	>= 100 mg/l (ErC50; DIN 38412-9; 72 h; Scenedesmus subspicatus)

12.2. Persistence and degradability

Benzyl Alcohol (100-51-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.6 g O ₂ /g substance
Chemical oxygen demand (COD)	2.4 g O ₂ /g substance
ThOD	2.5 g O ₂ /g substance

1,2-Cyclohexanediamine (694-83-7)	
Persistence and degradability	Biodegradability in water: no data available.

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Triethylenetetramine (112-24-3)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available. Photodegradation in the air.

12.3. Bioaccumulative potential

Benzyl Alcohol (100-51-6)	
Log Pow	1-1.1, Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,2-Cyclohexanediamine (694-83-7)	
Log Pow	0.09 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Triethylenetetramine (112-24-3)	
Log Pow	-1.86 - -1.41 (Calculated)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

Benzyl Alcohol (100-51-6)	
Surface tension	0.04 N/m (20 °C)

12.5. Other adverse effects

Effect on global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations : For small amounts, mix resin and hardener according to product directions and allow to harden. When cured, product is non-hazardous, and may be placed in industrial or municipal landfill if local regulations permit. . Collect all waste in suitable and labeled containers and dispose according to local legislation. Disposal through controlled incineration or authorized waste dump.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : NOT REGULATED

UN-No.(DOT) : NOT REGULATED

Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

50263 efi Polymers Epoxy Hardener (none - mix)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Aliphatic polyamines	CAS No UNKNOWN	15-30%
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Benzyl Alcohol (100-51-6)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
1,2-Cyclohexanediamine (694-83-7)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
TETA/Propylene oxide reaction products (26950-63-0 TS)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e., Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

220UR Part B Epoxy Hardener (none - mix)

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory

15.3. US State regulations

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

Triethylenetetramine (112-24-3)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Abbreviations and acronyms

: N.A. - Not Applicable
N.E. - Not Established
N.D. - Not Determined
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = US Occupational Health and Safety Administration
TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs)
STEL = Short-Term Exposure Limit (15 min)
C = Ceiling Value
PEL = Permissible Exposure Limit
OEL = Occupational Exposure Limit
IDLH = Immediately Dangerous to Life and Health
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
PNEC = Predicted No Effect Concentration
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NOAEC = No Observed Adverse Effect Concentration.

Other information

: **DISCLAIMER:** To the best of our knowledge, the information contained in this MSDS is accurate or is obtained from sources believed to be accurate. However, no liability, expressed or implied, is assumed for the accuracy or completeness of the information contained herein. Buyer assumes liability in its use of the material.

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Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapor) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Flam. Liq. 4	Flammable liquids Category 4
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
Skin Sens. 1B	Skin sensitization Category 1B
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H320	Causes eye irritation
H332	Harmful if inhaled
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard

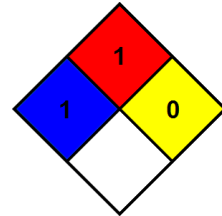
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection

: C

C - Safety glasses, Gloves, Synthetic apron

SDS US (GHS HazCom 2012)

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