



QuakeBond™ 300SR Part B (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 : Mixtures
Product code : 50152
Trade name : QuakeBond 300SR Part B (Hardener)

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

Recommended use : Polymer preparations and compounds

1.3. Details of the supplier of the safety data sheet

QuakeWrap, Inc
6840 S Tucson Blvd
Tucson, Arizona 85712 - 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

Acute toxicity (oral) Category 4	H302
Acute toxicity (dermal) Category 4	H312
Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 1	H318
Skin sensitization Category 1	H317
Reproductive toxicity Category 2	H361
Hazardous to the aquatic environment - Acute Hazard Category 2	H401
Hazardous to the aquatic environment - Chronic Hazard Category 2	H411

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H302+H312 - Harmful if swallowed or in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H361 - Suspected of damaging fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing mist/vapors/spray
P264 - Wash all contact areas thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
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
P301+P312 - If swallowed: Call a poison center/doctor if you feel unwell
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
P308+P313 - If exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER or doctor/physician
P321 - Specific treatment: See SDS Section 4.

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P330 - Rinse mouth
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to special waste facility in accordance with regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Polyoxyamine	(CAS No) TRADE SECRET	>= 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Polyamidoamine	(CAS No) 26950-63-0	1 - 50	Eye Dam. 1, H318 Skin Sens. 1, H317
Benzyl Alcohol	(CAS No) 100-51-6	1 - 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:vapour), H332 Eye Irrit. 2B, H320
Epoxy Adduct	(CAS No) unknown	1 - 50	Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Skin Sens. 1B, H317
Triethanolamine substance with OEL values	(CAS No) 102-71-6	1 - 50	Not classified
1,2-ethanediamine, N,N'-bis(2-aminoethyl)-	(CAS No) 112-24-3	1 - 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317
1-piperazineethanamine	(CAS No) 140-31-8	< 1	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Piperazine	(CAS No) 110-85-0	< 1	Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Repr. 2, H361 Aquatic Acute 3, H402

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

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 : 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 : Dispose of contaminated leather articles. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash clothing frequently. Keep work clothing separately. Wash contaminated clothing before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- 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 immediate medical advice/attention.

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

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

Symptoms/injuries : Symptoms may be delayed.
Symptoms/injuries after inhalation : Inhalation of vapors may cause respiratory irritation. Cough.
Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction. Swelling. Redness.
Symptoms/injuries after eye contact : Swelling and conjunctivitis. Lacrimation. May cause chemical burns to skin and cornea (with temporary disturbance to vision).
Symptoms/injuries after ingestion : Abdominal pain. Cramps/uncontrolled muscular contractions. Nausea. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Chronic symptoms	*Triethylenetetramine (TETA) caused embryofetal toxicity and fetal malformations when fed to pregnant rats. Similar effects were not seen in studies in which this material was applied to the skin of rabbits, a more relevant route of industrial exposure. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of the amine. Repeated and prolonged overexposure may cause liver or kidney effects. Animal studies suggest chronic overexposure effects may target the liver.
Triethanolamine (102-71-6)	
Chronic symptoms	No effects known.
1-piperazineethanamine (140-31-8)	
Chronic symptoms	Repeated and/or prolonged exposure to vapors and/or aerosols may cause: Sore throat. Persistent cough. Asthma.
Piperazine (110-85-0)	
Chronic symptoms	Laboratory studies with *Piperazine* showed increased fetal deaths and fetal skeletal malformations in an oral 2-generation rat study.

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 : Water spray. Dry powder. Foam. Carbon dioxide.

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 : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Combustion produces toxic gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Boots, gloves, goggles.
Emergency procedures : Avoid contact with skin, eyes and clothing.

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.

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6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Dike and contain spill. Soak up small spill with inert solids. Sweep or shovel spills into appropriate container for disposal.
- Methods for cleaning up : 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

- Additional hazards when processed : When heated, material emits irritating fumes.
- 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. Avoid contact with skin and eyes. Avoid contact with skin, eyes and clothing. Remove contaminated clothing immediately. Use personal protective equipment as required. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Protect eyes, face and skin from liquid splashes.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store in a dry place.
- Maximum storage period : 12 months
- Storage temperature : 25 - 50 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Polyoxyamine (TRADE SECRET)		
Not applicable		
Polyamidoamine (26950-63-0)		
Not applicable		
1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)		
Not applicable		
Triethanolamine (102-71-6)		
ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
Not applicable		
1-piperazineethanamine (140-31-8)		
Not applicable		
Piperazine (110-85-0)		
DNEL	DNEL	0.3 mg/m ³ Workers, Short Term Inhalation, Local & Systemic effects
PNEC	PNEC	1.25 mg/l Fresh Water, Assessment Factors
Not applicable		
Epoxy Adduct (unknown)		
Not applicable		
Benzyl Alcohol (100-51-6)		
Not applicable		

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8.2. Exposure controls

- | | |
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| Appropriate engineering controls | : Ensure good ventilation of the work station. |
| Personal protective equipment | : Gloves. In case of insufficient ventilation or if heated, wear suitable respiratory equipment. Chemical goggles or safety glasses. Chemical goggles. |



- | | |
|-----------------------------------|---|
| Materials for protective clothing | : butyl rubber. Nitrile rubber. |
| Hand protection | : Protective gloves. |
| Eye protection | : Safety glasses. |
| Skin and body protection | : Wear suitable protective clothing. |
| Respiratory protection | : Wear respiratory protection. |
| 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 | : Colorless light yellow |
| Odor | : Amine-like |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : > 100 °C |
| Flash point | : > 100 °C |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : Not applicable. |
| Vapor pressure | : < 1 mm Hg @ 20 deg C |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Specific gravity / density | : 0.98 g/cm ³ |
| Solubility | : Poorly soluble in water. |
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : 170 cP |
| 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.

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10.3. Possibility of hazardous reactions

N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Reaction with epoxy resins or isocyanates in very large amounts or under uncontrolled conditions may produce extreme heat with noxious smoke and fumes.

10.4. Conditions to avoid

No additional information available

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 : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin.

efi Polymers Developmental Epoxy Hardener 50152 (Quakewrap) (DOT Non-Corr)	
ATE US (oral)	839.861 mg/kg body weight
ATE US (dermal)	1731.399 mg/kg body weight
Polyoxyamine (TRADE SECRET)	
LD50 oral rat	550 mg/kg OECD 425
LD50 dermal rat	> 1000 mg/kg OECD 402
ATE US (oral)	550.000 mg/kg body weight
ATE US (dermal)	1100.000 mg/kg body weight
1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
LD50 oral rat	1716 mg/kg
LD50 dermal rabbit	1465 mg/kg
ATE US (oral)	1716.000 mg/kg body weight
ATE US (dermal)	1465.000 mg/kg body weight
Triethanolamine (102-71-6)	
LD50 oral rat	6400 mg/kg
LD50 dermal rat	> 2000 µg/kg
ATE US (oral)	6400.000 mg/kg body weight
1-piperazineethanamine (140-31-8)	
LD50 oral rat	2097 mg/kg
LD50 dermal rabbit	866 mg/kg
ATE US (oral)	500.000 mg/kg body weight
ATE US (dermal)	866.000 mg/kg body weight
Piperazine (110-85-0)	
LD50 oral rat	2600 mg/kg OECD 401
LD50 dermal rabbit	8300 mg/kg OECD 402
ATE US (oral)	2600.000 mg/kg body weight
ATE US (dermal)	8300.000 mg/kg body weight
Benzyl Alcohol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LC50 inhalation rat (mg/l)	4178 mg/m ³ OECD403
ATE US (oral)	1620.000 mg/kg body weight
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	4178.000 mg/l/4h

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

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Carcinogenicity : Not classified

Triethanolamine (102-71-6)	
NOAEL (chronic,oral,animal/male,2 years)	> 250 mg/kg body weight OECD 451 DERMAL; 103 weeks/5 days/week No effects seen
NOAEL (chronic,oral,animal/female,2 years)	> 250 mg/kg body weight OECD 451 DERMAL; 103 weeks/5 days/week No effects seen
IARC group	3 - Not classifiable

Reproductive toxicity : Suspected of damaging fertility or the unborn child .

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

1-piperazineethanamine (140-31-8)	
NOAEL (oral, rat, 90 days)	151 - 285 mg/kg bodyweight/day OECD 422

Benzyl Alcohol (100-51-6)	
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight/day 103 weeks - 5days/wk
NOAEL (inhalation, rat, dust/mist/fume, 90 days)	1072 mg/l/6h/day 4 weeks

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Inhalation of vapors may cause respiratory irritation. Cough.

Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction. Swelling. Redness.

Symptoms/injuries after eye contact : Swelling and conjunctivitis. Lacrimation. May cause chemical burns to skin and cornea (with temporary disturbance to vision).

Symptoms/injuries after ingestion : Abdominal pain. Cramps/uncontrolled muscular contractions. Nausea. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Chronic symptoms	*Triethylenetetramine (TETA) caused embryofetal toxicity and fetal malformations when fed to pregnant rats. Similar effects were not seen in studies in which this material was applied to the skin of rabbits, a more relevant route of industrial exposure. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of the amine. Repeated and prolonged overexposure may cause liver or kidney effects. . Animal studies suggest chronic overexposure effects may target the liver.

Triethanolamine (102-71-6)	
Chronic symptoms	No effects known.

1-piperazineethanamine (140-31-8)	
Chronic symptoms	Repeated and/or prolonged exposure to vapors and/or aerosols may cause: Sore throat. Persistent cough. Asthma.

Piperazine (110-85-0)	
Chronic symptoms	Laboratory studies with *Piperazine* showed increased fetal deaths and fetal skeletal malformations in an oral 2-generation rat study.

SECTION 12: Ecological information

12.1. Toxicity

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

Polyoxyamine (TRADE SECRET)	
LC50 fish 1	> 100 mg/l OECD 203 Fish
EC50 Daphnia 1	13 mg/l OECD 202 Daphnia
ErC50 (algae)	4.4 mg/l OECD 201
NOEC (chronic)	1 mg/l 72 hr, Algae OECD 201
NOEC chronic algae	1 mg/l

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1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Threshold limit algae 1	>= 100 mg/l (ErC50; DIN 38412-9; 72 h; Scenedesmus subspicatus)
Triethanolamine (102-71-6)	
LC50 fish 1	11800 mg/l 96 hr Flow-Through
EC50 Daphnia 1	610 mg/l Daphnia 48-Hr Static (ASTM)
EC50 other aquatic organisms 1	> 1000 mg/l Bacteria 180 min Static OECD 209 Activated Sludge
EC50 Daphnia 2	2040 mg/l
ErC50 (algae)	512 mg/l 72 Hr Static DIN DIN 38412
NOEC (chronic)	16 mg/l Daphnia 21 day Semi-Static
1-piperazineethanamine (140-31-8)	
LC50 fish 1	2190 mg/l 96 Hr Static
EC50 Daphnia 1	58 mg/l 48 Hr OECD 202
EC50 other aquatic organisms 2	511 mg/l iso 9509:2006 Bacteria 2 Hr Static
Threshold limit algae 2	> 1000 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum; Fresh water)
Benzyl Alcohol (100-51-6)	
LC50 fish 1	460 mg/l 96 HR, Pimephales promelas
EC50 Daphnia 1	230 mg/l OECD 202
EC50 other aquatic organisms 1	390 mg/l Bacteria, 24 hrs ISO 8192
NOEC (chronic)	310 mg/l OECD 201 Algae

12.2. Persistence and degradability

Polyoxyamine (TRADE SECRET)	
Persistence and degradability	Not readily biodegradable.
1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available. Photodegradation in the air.
Triethanolamine (102-71-6)	
Persistence and degradability	Readily biodegradable, according to appropriate OECD test.
1-piperazineethanamine (140-31-8)	
Persistence and degradability	not readily degradable in water.
Chemical oxygen demand (COD)	0.56 g O ₂ /g substance
Benzyl Alcohol (100-51-6)	
Persistence and degradability	Readily biodegradable, according to appropriate OECD test.

12.3. Bioaccumulative potential

Polyoxyamine (TRADE SECRET)	
Log Pow	-1.13
Bioaccumulative potential	No bioaccumulation data available.
1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Bioaccumulative potential	Bioaccumulation: not applicable.
Triethanolamine (102-71-6)	
BCF fish 2	< 3.9 mg/l
Log Pow	-2.3
1-piperazineethanamine (140-31-8)	
BCF fish 1	0.3 - 6.3 OECD 305: Cyprinus carpio; 4-6 weeks Flow-through ; Fresh water;
Log Pow	-1.48
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

1-piperazineethanamine (140-31-8)	
Log Koc	log Koc,4.57; Read-across; GLP

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12.5. Other adverse effects

Effect on global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Landfilling of free liquid not recommended. Fuels burning or incineration preferred for material disposed of in "as sold" condition if regulations permit.

Sewage disposal recommendations : Do not discharge into drains or the environment.

Waste disposal recommendations : Collect all waste in suitable and labeled containers and dispose according to local legislation. Dispose in a safe manner in accordance with local/national regulations. 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.

Additional information : Material in "as sold" condition is not regulated as a hazardous waste under federal RCRA regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transport by sea

UN-No. (IMDG) : 3082

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

Packing group (IMDG) : III - substances presenting low danger

Limited quantities (IMDG) : 5 L

Marine pollutant : Yes (IMDG only)



Air transport

UN-No. (IATA) : 3082

Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s.

Class (IATA) : 9 - Miscellaneous Dangerous Goods

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

efi Polymers Developmental Epoxy Hardener 50152 (Quakewrap) (DOT Non-Corr)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Polyoxyamine (TRADE SECRET)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
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

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Polyamidoamine (26950-63-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
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

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Immediate (acute) health hazard

Triethanolamine (102-71-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

1-piperazineethanamine (140-31-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Piperazine (110-85-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Epoxy Adduct (unknown)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Benzyl Alcohol (100-51-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

No additional information available

Piperazine (110-85-0)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

EU-Regulations

efi Polymers Developmental Epoxy Hardener 50152 (Quakewrap) (DOT Non-Corr)	
RoHS Substance	No
SVHC	No
Polyoxyamine (TRADE SECRET)	
SVHC	No
RoHS Substance	No
Polyamidoamine (26950-63-0)	
SVHC	No
RoHS Substance	No
1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
SVHC	No
RoHS Substance	No
Triethanolamine (102-71-6)	
SVHC	No
RoHS Substance	No

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1-piperazineethanamine (140-31-8)	
SVHC	No
RoHS Substance	No
Piperazine (110-85-0)	
SVHC	No
RoHS Substance	No
Epoxy Adduct (unknown)	
SVHC	No
RoHS Substance	No
Benzyl Alcohol (100-51-6)	
SVHC	No
RoHS Substance	No

National regulations

efi Polymers Developmental Epoxy Hardener 50152 (Quakewrap) (DOT Non-Corr)
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

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

15.3. US State regulations

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)
U.S. - New Jersey - Right to Know Hazardous Substance List

Benzyl Alcohol (100-51-6)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

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.

Full text of H-phrases:

H302	Harmful if swallowed
H311	Toxic in contact with skin
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
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H361	Suspected of damaging fertility or the unborn child
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms:

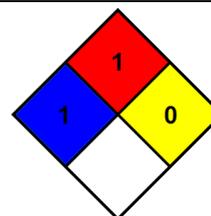
QuakeBond™ 300SR Part B (Hardener)

Safety Data Sheet

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

	<p>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</p>
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- 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

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