

Weldfast ZC-275 Part B Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Weldfast ZC-275 Part B

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

- Epoxy adhesive curing agent
- This product is intended to be mixed only with its specific base adhesives; Weldfast ZC-275 Part A

1.3 Details of the supplier of the safety data sheet

- NOV Fiber Glass Systems
17115 San Pedro Avenue, Suite 200
San Antonio, Texas 78232 USA
Tel: 1-210-477-7500
Fax: 1-210-231-5915
E-mail: Mike.Thayer@nov.com

1.4 Emergency telephone number(s)

- 3E Company, 24-Hour Support (Access Code/Contract Number: 333386)
 - USA, Canada 1-888-298-2344
 - Asia, Pacific 1-760-476-3960
 - Europe, Middle East, Africa 1-760-476-3961
 - Americas 1-760-476-3962

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Physical

- Corrosive

Health

- Acute toxicity, Category 2 (inhalation)
- Acute toxicity, Category 4 (oral)
- Acute toxicity, Category 4 (dermal)
- Acute toxicity, Category 1 (eyes)
- Skin corrosion, Category 1B
- Skin sensitizer, Category 1
- Specific target organ systemic toxicity – single exposure, Category 3 (respiratory tract irritation)

Environmental

- Not classified

2.2 Label elements

Signal Word(s)

- DANGER

Pictogram(s)



Hazard Statements

- Physical
 - Not classified
- Health
 - H302: Harmful if swallowed.
 - H312: Harmful in contact with skin.
 - H314: Causes severe skin burns and eye damage.
 - H317: May cause an allergic skin reaction.
 - H318: Causes serious eye damage.
 - H330: Fatal if inhaled.
 - H335: May cause respiratory irritation.
- Environmental
 - Not classified.

Precautionary Statements

- Prevention
 - P201: Obtain special instructions before use.
 - P202: Do not handle until all safety precautions have been read and understood.
 - P233: Keep container tightly closed.
 - P261: Avoid breathing dust/fume/gas/mist/vapor/spray.
 - P264: Wash skin thoroughly after handling.
 - P270: Do not eat, drink or smoke when using this product.
 - P271: Use only outdoors or in well-ventilated area.
 - P272: Contaminated work clothing should not be allowed out of the workplace.
 - P273: Avoid release to the environment.
 - P280: Wear protective gloves/protective clothing/eye protection/face protection.
- Response
 - P302+P352: IF ON SKIN: Wash with plenty of soap and water.
 - P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
 - P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P308+P311: If exposed or concerned: Call a POISON CENTER or doctor/physician.
 - P308+P313: IF exposed or concerned: Get medical advice/attention.
 - P331: Do NOT induce vomiting.
 - P332+P313: If skin irritation occurs: Get medical advice/attention.
 - P337+P313: If eye irritation persists: Get medical advice/attention.
 - P362+P364: Take off all contaminated clothing and wash it before reuse.
 - P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
 - P391: Collect spillage.
- Storage
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- Disposal
- P501: Dispose of contents/container in accordance with regulatory requirements.

2.3 Other Hazards

- PBT and vPvB assessment
 - None of the ingredients are considered to be either PBT or vPvB.

SECTION 3: Composition/information on Ingredients

3.1 Substances

- Not applicable

3.2 Mixtures

Chemical Identity	CAS No.	EC No.	Concentration Range (weight %)
Diethylenetriamine	000111-40-0	203-865-4	45 – 55
Ethyl-4-methyl-1h-imidazole, 2-	000931-36-2	213-234-5	15 – 25
Methyl imidazole, 4-	000822-36-6	212-497-3	2 - 6
Aminoethylpiperazine	000140-31-8	205-411-0	< 0.5
Substances that do not meet the classification and labeling criteria established under the GHS	Not applicable	Not applicable	Balance

SECTION 4. First-aid measures

4.1 Description of first-aid measures

Inhalation

- Move to fresh air.
- If difficulty in breathing or respiratory irritation; seek immediate medical attention.
- If breathing has stopped; seek immediate medical attention, perform artificial respiration.

Skin contact

- Wash affected area immediately and thoroughly with flowing water for at least 30 minutes.
- Immediately remove any contaminated clothing.
- If irritation develops or persists; seek medical attention.

Eye contact

- Wash affected area immediately and thoroughly with flowing water for at least 30 minutes.
- Remove contact lenses, if present, after the first 5 minutes of washing.
- Obtain prompt medical attention.

Ingestion

- Do not induce vomiting.
- Give one cup (8 ounces, 240 mL) of water or milk if available and transport to a medical facility.
- Never give anything by mouth to an unconscious person.

4.2 Most Important symptoms and effects, both acute and delayed

Acute

- No additional data available.

Delayed

- No additional data available.

4.3 Indication of any immediate medical attention and special treatment needed

- Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
 - Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).
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SECTION 5: Firefighting measures

5.1 Extinguishing media

- Alcohol-resistant foam, carbon dioxide, dry chemical.
- Do not use direct water stream; may spread fire.

5.2 Specific hazards arising from the substance or mixture

- During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: carbon dioxide, carbon monoxide, nitrogen oxides.
- Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.3 Advice for firefighters

- Avoid contact with skin.
 - Wear self-contained breathing apparatus and protective clothing, as necessary.
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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Due to the high viscosity of this product and the relatively small end-use container size, significant spills are unlikely to occur.
- If a spilled in an enclosed area, ensure adequate ventilate.

6.2 Environmental precautions

- Do not allow spilled materials to enter storm sewers, sanitary sewers, or impact groundwater.
- Do not allow spilled materials to remain on the ground.

6.3 Methods and materials for containment and cleaning up

- Absorb with materials such as: clay, dirt, sand. Do NOT use absorbent materials such as: cellulose, sawdust, ground corn cobs. Remove with shovel. Collect in suitable and properly labeled containers.

6.4 Reference to other sections

- See also, *SECTION 8: Control parameters* and *SECTION 13: Disposal considerations*.
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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Avoid contact with skin and eyes and inhalation of vapors.
- Do not eat, drink, or smoke when using this product.
- Thoroughly wash exposed skin after working with this product.
- Only use this product in a well-ventilated area.
- Empty containers may contain product residue and may be hazardous.

7.2 Conditions for safe storage, including any incompatibilities

- Do not store near acids.
- Keep containers tightly closed in a dry, cool, and well-ventilated location.
- Store in original containers or in containers of the same construction material as original containers.
- Minimize sources of ignition, such as static build-up, heat, spark, flame.

7.3 Specific end use(s)

- No additional data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Diethylenetriamine
CAS No. 000111-40-0

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
Australia	1 ppm	None established	Workplace Exposure Standards for Airborne Contaminants
Austria	1 ppm	None established	Maximum Workplace Concentrations (MAK) Technical Guidance Concentrations (TRK)
Belgium	1 ppm	None established	limites d'exposition professionnelle – VLEP/ Grenswaarden voor beroepsmatige blootstelling – GWBB
Canada – Alberta	1 ppm	None established	Occupational Safety and Health Code
Canada – British Columbia	1 ppm	None established	Occupational Health and Safety Regulation, Table of Exposure Limits for Chemical and Biological Substances
Canada - Ontario	1 ppm	None established	Regulation 883, Control of Exposure to Biological or Chemical Agents
Canada - Quebec	1 ppm	None established	Regulation respecting occupational safety and health
Canada - Saskatchewan	1 ppm	2 ppm	The Occupational Safety and Health Regulations
Denmark	1 ppm	2 ppm	Grænseværdier for stoffer og materialer
France	1 ppm	None established	Institut National de Recherche et de Sécurité (INRS)
Ireland	1 ppm	None established	Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations
New Zealand	1 ppm	None established	Workplace Exposure Standards and Biological Exposure Indices
Poland	1 ppm	None established	Principles and Methods of Assessing the Working Environment
Singapore	1 ppm	None established	Workplace Safety and Health (General Provisions) Regulations

South Korea	1 ppm	None established	[Need reference]
Spain	1 ppm	None established	Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT)
Sweden	1 ppm	2 ppm	
Switzerland	1 ppm	None established	Verordnung über die Verhütung von Unfällen und Berufskrankheiten (VUV)", Art. 50 Abs.3
USA (ACGIH)	1 ppm	None established	None
USA (NIOSH)	1 ppm	None established	NIOSH Pocket Guide to Chemical Hazards (Recommendations Only)
United Kingdom	1 ppm	None established	EH40 Workplace exposure limits

Ethyl-4-methyl-1h-imidazole, 2-
CAS No. 000931-36-2

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
No OELs were found for this ingredient.			

Methyl imidazole, 4-
CAS No. 000822-86-4

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
No OELs were found for this ingredient.			

Aminoethylpiperazine
CAS No. 000140-31-8

Country	Occupational Exposure Limit (OEL) Values		Legal Basis
	Eight Hour TWA	Fifteen Minute STEL	
No OELs were found for this ingredient.			

8.2 Exposure controls

Appropriate engineering controls

- Provide adequate general and local exhaust ventilation to control airborne concentrations to below the occupational exposure limit values.
- Provide readily accessible eye wash stations and safety showers.

Personal protective equipment

- Eye and face protection
 - Approved safety glasses with side shields (e.g., ANSI Z87, EN166)
- Skin protection
 - Hand protection: PVC, Nitrile rubber or Neoprene gloves are generally recommended. Different glove materials, thicknesses, and from different glove manufacturers may provide varying degrees of

protection. Temperature and specific use can impact glove effectiveness. Some gloves may be intended to be used only once and then discarded, while others may be used for longer periods of time. The glove supplier should provide the user with information regarding permeability and breakthrough time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Other skin protection: Such clothing as to minimize or eliminate the chance of skin contact with the product.
- Respiratory protection
 - If ventilation is insufficient to keep airborne concentrations below the occupation exposure limit levels, full or half-mask respirator fitted with organic vapor cartridges and/or particulate filters (for sanding, grinding, cutting, etc. cured material). Filter masks may be of limited use in cases of high or unknown exposure.

Environmental exposure controls

- Do not flush into surface water or sanitary sewer system.
- Do not place directly onto ground.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance	Black paste
- Odor	Amine
- Odor threshold	No data available
- pH	Corrosive
- Melting point/freezing point	No data available
- Initial boiling point and boiling range	No data available
- Flash point	No data available
- Evaporation rate	No data available
- Flammability (solid, gas)	No data available
- Upper/lower flammability or explosive limits	No data available
- Vapor pressure	< 1 mm Hg @ 25°C / 77°F
- Vapor density (air = 1)	> 1
- Relative density	1.20 – 1.25
- Solubility(ies)	No data available
- Partition coefficient: n-octanol/water	No data available
- Auto-ignition temperature	No data available
- Decomposition temperature	No data available
- Viscosity	No data available
- Explosive properties	No data available
- Oxidizing properties	No data available

9.2 Other information

- No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

- No hazardous decomposition expected if product is stored and used as directed.
- Exothermic reactions are expected when mixed with epoxy adhesive.

10.2 Chemical stability

- Product is stable under normal conditions of storage and use.

10.3 Possibility of hazardous reactions

- Exothermic reactions are expected when mixed with epoxy adhesive.

10.4 Conditions to avoid

- Avoid unintended mixing with epoxy adhesive.

10.5 Incompatible materials

- Avoid contact with oxidizing materials.
- Avoid contact with metals such as: brass, bronze, copper, copper alloys.
- Avoid contact with: acids, acrylates, alcohols, aldehydes, halogenated hydrocarbons, ketones, nitrites.
- Avoid contact with absorbent materials such as: ground corn cobs, moist organic absorbents, peat moss, sawdust.

10.6 Hazardous decomposition products

- Decomposition products depend upon temperature, air supply and the presence of other materials and may include, but are not limited to: ammonia, ethylenediamine, volatile amines..

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

- Data for ingredients not listed were not found or not sufficient for classification.

Diethylenetriamine (CAS No. 000111-40-0)

- | | | | |
|--------------|--------|----------------|--------------------|
| - Oral | Rat: | LD50 | ca. 800-2600 mg/kg |
| - Inhalation | Rat | LC90 (4 hours) | 1.8 mg/L |
| - Dermal | Rabbit | LD50 | ca. 600-1240 mg/kg |

Methyl imidazole, 4- (CAS No. 000822-36-6)

- | | | | |
|--------------|--------|------|-------------------|
| - Oral | Rat: | LD50 | > 750 mg/kg |
| - Inhalation | | | No data available |
| - Dermal | Rabbit | LD50 | 440 mg/kg |

Reproductive toxicity

- Data for ingredients were not found or not sufficient for classification.

STOT-single exposures

- One or more ingredients may present the following:

Respiratory system. Skin. Eyes. Asthma. Adverse respiratory effects (such as cough, tightness of chest or shortness of breath). Eye disease. Skin disorders. Allergies. Adverse skin effects (such as rash, irritation, corrosion). Adverse eye effects (such as conjunctivitis, corneal damage).

STOT-repeated exposures

- Data for ingredients not listed were not found or not sufficient for classification.

Aspiration hazard

- Data for ingredients were not found or not sufficient for classification.
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SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

- Data for ingredients not listed were not found or not sufficient for classification.

Diethylenetriamine (CAS No. 000111-40-0)

- Fish:	<i>Poecilia reticulata</i>	LC50 (96-hour)	1014 mg/L
- Crustacea	<i>Daphnia magna</i>	EC50 (48-hour)	17 mg/L
- Algae / Aquatic plants	<i>Scenedesmus subspicatus</i>	EC50 (96-hour)	592 mg/L
- Bacteria	<i>Pseudomonas putida</i>	EC50 (1-hour)	2000 mg/L

Methyl imidazole, 4- (CAS No. 000822-36-6)

- Fish:	<i>Leuciscus idus</i>	LC50 (96-hour)	ca. 34 mg/L
- Crustacea	<i>Daphnia magna</i>	EC50 (24-hour)	280 mg/L
- Algae / Aquatic plants	<i>Scenedesmus subspicatus</i>	EC50 (72-hour)	2 mg/L
- Bacteria	<i>Pseudomonas putida</i>	EC50 (17-hour)	440 mg/L

Aminoethylpiperazine (CAS No. 000140-31-8)

- Fish:	<i>Poecilia reticulata</i>	LC50 (96-hour)	> 1000 mg/L
- Crustacea	<i>Daphnia magna</i>	EC50 (24-hour)	190 mg/L
- Algae / Aquatic plants	<i>Selenastrum capricornutum</i>	EC50 (72-hour)	495 mg/L
- Bacteria	Activated sludge	EC20 (1-hour)	1600 mg/L

Chronic toxicity

- Data for ingredients not listed were not found or not sufficient for classification.

Diethylenetriamine (CAS No. 000111-40-0)

- Fish:	<i>Gasterosteus aculeatus</i>	NOEC (28-day)	10 mg/L
- Crustacea	<i>Daphnia magna</i>	NOEC (21-day)	5.6 mg/L
		LOEC (21-day)	11.3 mg/L

12.2 Persistence and degradability

- Not expected to be readily biodegradable.

12.3 Bioaccumulative potential

- Data for ingredients were not found or not sufficient for classification.

12.4 Mobility in soil

- Data for ingredients were not found or insufficient for classification.

12.5 Results of PBT and vPvB assessment

- None of the ingredients are listed.

12.6 Other adverse effects

- No additional data is available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Must be disposed of in accordance with local regulatory requirements.
- Land disposal of uncured product is discouraged and illegal in many jurisdictions.
- Sewer disposal is discouraged.
- Empty containers may contain hazardous residue and must be disposed accordingly.

SECTION 14: Transport information

- The transport information provided below conforms to the following:
 - UN Model Regulations
 - International Carriage of Dangerous Goods by Road (ADR)
 - International Carriage of Dangerous Goods by Rail (RID)
 - International Carriage of Dangerous Goods by Inland Waterways (ADN)
 - International Maritime Dangerous Goods (IMDG) Code
 - International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air

	If offered alone, the classification is as described below	If offered with the catalyst within the same inner packaging, the classification is as described below
14.1 UN number	3259	3259
14.2 UN proper shipping name	AMINES, SOLID, CORROSIVE, N.O.S., Mixture (Diethylenetriamine)	AMINES, SOLID, CORROSIVE, N.O.S., Mixture (Diethylenetriamine)
14.3 Transport hazard class(es)	8	8
14.4 Packing group	II	II
14.5 Environmental hazards	None	None
14.6 Special precautions for user	None	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Product is not offered nor intended to be transported in bulk quantities.	Product is not offered nor intended to be transported in bulk quantities.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The regulatory information provided below may not be comprehensive.

Canada

Controlled Products Regulation (CPR)

- This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Ingredient Disclosure List (IDL)

- All components of this mixture that are on the IDL above their specified concentration are disclosed in this SDS.

United States

EPCRA			CERCLA	RCRA	CAA	OSHA
Section 302 (EHS) TPQ (LB/KG)	Section 304 RQ (LB/KG)	Section 313	RQ (LB/KG)	P/U Codes	112(r) TQ (LB/KG)	Highly Hazardous Chemical
None of the ingredients are listed						

15.2 Chemical safety assessment

- No chemical safety assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Revision history

Revision Number	Revision Date	Revision Description
1	4-SEP-2014	Initial SDS creation in conformance with OSHA hazard communication standard (29 CFR 1910.1200), Regulation (EC) No. 1907/2006 (REACH), and UN Globally Harmonized System (GHS).standard (29 CFR 1910.1200) and UN Globally Harmonized System (GHS).

Legend to abbreviations and acronyms used

- ACGIH American Conference of Governmental Industrial Hygienists
- ANSI American National Standards Institute
- CAA Clean Air Act
- cP centipoise
- CFR Code of Federal Regulations (US)
- EN European Standard (French: *Européen Norme*)
- EPCRA Emergency Planning and Community Right-to-Know Act
- IARC International Agency for Research on Cancer
- IBC Code International Bulk Chemical Code
- LOEC Lowest Observed Effects Concentration
- MARPOL Marine Pollution
- NOEL No Observed Effects Concentration
- NIOSH National Institute for Occupational Safety and Health
- OSHA Occupational Safety and Health Administration (US)
- PBT Persistent Bioaccumulative and Toxic
- RCRA Resource Conservation and Recovery Act
- vPvB very Persistent and very Bioaccumulative

Key literature references and sources for data

- ESIS. European chemical Substances Information System. <http://esis.jrc.ec.europa.eu/>.
- USEPA. 2006. List of Lists, Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act. EPA 550-B-01-003. October 2006.