



Safety Data Sheet

Date Revised: 10/02/2023

Supersedes: 08/24/2022

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name(s): Five Star® DP Epoxy Grout - Nuclear/Component B Hardener
Five Star® DP Epoxy Grout High Flow - Nuclear/Component B Hardener

Synonyms: Epoxy Hardener, Component B

Product Use: For use with Five Star Epoxy Aggregate and Five Star Epoxy Resin in nuclear safety application zones.

Restrictions on Use: To be used with specific Five Star® systems.

Manufacturer/Supplier: Five Star Products, Inc.
2 Enterprise Drive, Suite 303
Shelton, CT 06484

Phone #: 203-336-7900

Emergency Phone #: VelocityEHS 1-800-255-3924
(Outside the U.S. 1-813-248-0585)

SECTION 2: HAZARD(S) IDENTIFICATION-GHS INFORMATION

Classification: Acute Toxicity – Oral, Category 4
Acute Toxicity – Dermal, Category 3
Skin Corrosion – Category 1
Eye Damage – Category 1
Sensitization – Skin, Category 1
STOT, Single Exposure – Category 3

Label Elements/Hazard Pictograms:



Signal Word: Danger

Hazard Statements: Harmful if swallowed, H302
Toxic in contact with skin, H311
Causes severe skin burns and eye damage, H314
May cause an allergic skin reaction, H317
Causes serious eye damage, H318
May cause respiratory irritation, H335

Precautionary Statements/Prevention: Do not breathe dust, fume, gas, mist, vapors, or spray, P260
Wash thoroughly after handling, P264
Do not eat, drink or smoke when using this product, P270
Contaminated work clothing should not be allowed out of the workplace, P272



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Wear protective gloves, protective clothing, eye protection and face protection, P280

Wear respiratory protection, P284

Response:

If swallowed: Rinse mouth. Do NOT induce vomiting, P330, P331.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower, P361, P353.

If inhaled: Remove person to fresh air and keep comfortable for breathing, P340.

If in eyes: Rinse cautiously with water for several minutes, P351. Remove contact lenses, if present and easy to do. Continue rinsing, P338.

Immediately call a poison center or doctor, P310.

If skin irritation or rash occurs, P333: Get medical advice/attention, P313.

If experiencing respiratory symptoms, P342: Call a poison center or doctor, P310. Wash contaminated clothing before reuse, P363.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable regional, national, and local laws and regulations.

Hazards Not Otherwise Classified:

Not applicable

Ingredients with Unknown Toxicity:

70% of this product mixture consists of ingredients of unknown acute toxicity.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS			
Hazardous Ingredient(s)	Common Name/Synonyms	CAS No.	%wt/wt
Aliphatic Amines	Not available	TS	30-60
1,2-Ethanediamine, N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-	Not applicable	112-57-2	30-60
Tertiary Amines	Not available	TS	0-5
Amine Catalyst	Not applicable	TS	0-5

SECTION 4: FIRST AID MEASURES

Inhalation:

If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor.

Acute and delayed symptoms and effects: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Signs/symptoms may include burning pain in



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Eye Contact:	<p>the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.</p> <p>If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.</p> <p>Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.</p>
Skin Contact:	<p>If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Immediately call a poison center or doctor. Wash contaminated clothing before reuse.</p> <p>Acute and delayed symptoms and effects: Toxic in contact with skin. May cause an allergic skin reaction. Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, and blistering, ulceration, and tissue destruction.</p>
Ingestion:	<p>If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.</p> <p>Acute and delayed symptoms and effects: Harmful if swallowed. Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.</p>
General Advice:	<p>In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible). First Aid responders should pay attention to self-protection and use recommended protective clothing (chemical resistant gloves, splash protection).</p>
Note to Physicians:	<p>Symptoms may not appear immediately. Treat symptomatically.</p>

SECTION 5: FIRE-FIGHTING MEASURES

Flammability and Explosion Information:	Not flammable or combustible by OSHA/WHMIS criteria.
Sensitivity to Mechanical Impact:	This material is not sensitive to mechanical impact.
MEANS OF EXTINCTION	
Suitable Extinguishing Media:	<p>Small Fire: Dry chemical, CO2 or water spray.</p> <p>Large Fire: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.</p>
Unsuitable Extinguishing Media:	Not available



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Products of Combustion: Oxides of carbon, oxides of nitrogen, ammonia

Protection of Firefighters: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet). Stay upwind. Keep out of low areas. Ventilate enclosed areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Handling: Do not swallow. Do not breathe mist, vapors, or spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. See Section 8 for information on Personal Protective Equipment.

Storage: Store locked up. Store away from incompatible Materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.



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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	ACGIH (TLV)	OSHA (PEL)
Aliphatic Amines	TS	Not established	Not established
1,2-Ethanediamine, N1-(2-aminoethyl)-N2-[2-[(2-aminoethyl)amino]ethyl]-*	112-57-2	Not established	Not established
Tertiary Amines	TS	Not established	Not established
Amine Catalyst	TS	Not established	Not established

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

***AIHA WEEL (United States, 10/2011):**

Absorbed through skin. Skin sensitizer.
TWA: 5 mg/m³ 8 hours.

Engineering Controls:

Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection:

Wear chemical safety goggles and full face shield. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced for OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Rubber or polyethylene material is recommended. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing. Clothing with full length sleeves and pants should be worn.

Respiratory Protection:

Wear respiratory protection. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator with organic vapor cartridge, or self-contained breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices.



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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Reddish brown liquid
Color:	Reddish brown
Odor:	Strong, ammoniacal
Odor Threshold:	N/A
Physical State:	Liquid
pH:	Not available
Melting Point / Freezing Point:	Not available
Initial Boiling Point:	Not available
Boiling Point:	> 100° C (212°F)
Flash Point:	> 93.4° C (200.1°F)
Evaporation Rate:	Not available
Flammability (solid, gas):	Not available
Lower Flammability Limit:	Not available
Upper Flammability Limit:	Not available
Vapor Pressure:	1.33 mBar
Vapor Density:	> 1 (Air=1)
Relative Density:	0.99 (Water=1)
Solubility:	Partially soluble in water
Partition Coefficient: n-Octanol/Water:	Not available
Auto-ignition Temperature:	Can auto-ignite in air at approximately 572°F (300°C)
Decomposition Temperature:	Not available
Viscosity:	Not available
Percent Volatile, wt. %:	0%
VOC Content, wt. %:	0%
Density:	Not available
Coefficient of Water/Oil Distribution:	Not available

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions.

Hazardous decomposition byproducts: Hazardous polymerization may occur.

Conditions to Avoid: Can auto-ignite in air at approximately 572°F (300°C)



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Incompatible Materials: Epoxy resins under uncontrolled conditions, acid, oxidizing material, halogenated, organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Skin Sensitization
1,2-Ethanediamine, N1-(2- aminoethyl)-N2-[2-[(2-aminoethyl) amino]ethyl]-	3,250, Rat	>1,000, Rabbit	Rabbit Positive

Primary Irritant Effect

On the Skin: Irritant to skin and mucous membranes.

Primary Irritant Effect

On the Eye: Irritating effect.

Swallowing: Can cause abdominal irritation, nausea, vomiting, and diarrhea.

Additional Toxicological Information:

This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA, or ACGIH as of this date, greater or equal to 0.1%

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: All work practices must be aimed at eliminating environmental contamination.

Aquatic Toxicity: This material is harmful to the environment.

Persistence and Degradability: The product is partially biodegradable. Significant residue remains.

Bio-accumulative Potential: Does not accumulate in organisms.

Mobility in Soil: No further relevant information available

Ecotoxicological Effects Remark: Toxic for fish. Due to mechanical actions of the product damages may occur. The declared action may be partly caused by lack of oxygen.

Additional Ecological Information: No further relevant information available

General Notes: No further relevant information available

PBT Assessment: N/A

vPvB Assessment: N/A

Other Adverse Effects: No further relevant information available



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SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Recommendation:

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers and liners may retain some product residues. Vapor from some product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal.

ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES.

Uncleaned Packaging:

Empty containers may contain residue and may be dangerous. Do not attempt to refill or clean without proper instructions. Empty drums should be drained and stored safely for reconditioning or recycling.

Recommendation:

Disposal must be made according to official regulations.

SECTION 14: TRANSPORT INFORMATION

US DEPARTMENT of TRANSPORTATION (DOT) Proper Shipping Name:

UN2735, AMINES, LIQUID, CORROSIVE, NOS (ALIPHATIC/TERTIARY AMINES: TETRAETHYLENEPENTAMINE) 8, PG III

Class:

8

UN #:

UN2735

Packing Group:

III

CANADA Transportation of Dangerous Goods (TDG) Proper Shipping Name:

UN2735, AMINES, LIQUID, CORROSIVE, NOS (ALIPHATIC/TERTIARY AMINES: TETRAETHYLENEPENTAMINE) 8, PG III

Class:

8

UN #:

UN2735

Packing Group:

III



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Air Transport (ICAO-IATA/DGR) Proper Shipping Name:	UN2735, AMINES, LIQUID, CORROSIVE, NOS (ALIPHATIC/TERTIARY AMINES: TETRAETHYLENEPENTAMINE) 8, PG III
Class:	8
UN#:	UN2735
Packing Group:	III
Sea Transport (IMDG Code/GGVSee) Proper Shipping Name:	UN2735, AMINES, LIQUID, CORROSIVE, NOS (ALIPHATIC/TERTIARY AMINES: TETRAETHYLENEPENTAMINE) 8, PG III
Class:	8
UN#:	UN2735
Packing Group:	III
Marine Pollutant:	Yes
Special Provision(s):	EmS Code F-A, S-B

SECTION 15: REGULATORY INFORMATION

CHEMICAL INVENTORIES

US (TSCA): The components of this product are in compliance with the chemical notification requirements of TSCA.

CANADA (DSL): The components of this product are in compliance with the chemical notification requirements of NSN Regulations under CEPA, 1999.

FEDERAL REGULATIONS

CANADA: n/a

WHMIS Classification: n/a

UNITED STATES: This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200

SARA Title III: No components are listed.

STATE REGULATIONS

Massachusetts US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

New Jersey US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Pennsylvania US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

California
California Prop 65: This product does not contain chemicals known to the State of California to be Carcinogenic.



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SECTION 16: OTHER INFORMATION

HMIS (Hazardous Material Information System):

Health	Flammability	Physical Hazard	Personal Protection
3	1	0	E

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