Safety Data Sheet

Date Revised: 10/02/2023

Supersedes: 08/24/2022

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name(s):	**Five Star® Fluid Grout 100 - Nuclear**
Synonyms:	FG100, Fluid 100, Fluid Grout, 100 Grout
Product Use:	For use in supporting machinery and equipment requiring precision alignment in nuclear safety application zones.
Manufacturer/Supplier	Five Star Products, Inc. 2 Enterprise Drive, Suite 303 Shelton, CT 06484 USA
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 Oral Toxicity – Category 4
Skin Corrosion/Irritation – Category 1
Acute Toxicity – Dermal, Category 5
Sensitization – Dermal, Category 1
Eye Damage/Irritation – Category 1
Sensitization – Respiratory, Category 1
Specific Target Organ Systemic Toxicity (Single Exposure) – Cat 3
Carcinogenicity – Category 1A
Specific Target Organ Toxicity (Repeated Exposure) – Cat 2

Label Elements/Hazard Pictograms:

Signal Word: Danger

Hazard Statements:

H302 Harmful if swallowed
H313 May be 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
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 May cause respiratory irritation
H350 May cause cancer
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary Statements/Prevention:	P260 Do not breathe dust, fume, gas, mist, vapors, or spray P264 Wash thoroughly after handling P270 Do not eat, drink or smoke when using this product P272 Contaminated work clothing should not be allowed out of the workplace P280 Wear protective gloves, protective clothing, eye protection and face protection P284 Wear respiratory protection
Response:	P330, 331 If swallowed: Rinse mouth. Do NOT induce vomiting P361, 353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P340 If inhaled: Remove person to fresh air and keep comfortable for breathing P351, P338, P310 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 P333, P313 If skin irritation or rash occurs: Get medical advice/attention. P342, P310, P363 If experiencing respiratory symptoms: Call a poison center or doctor. 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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common Name/Synonyms	CAS No.	% wt/wt
Portland Cement *	Hydraulic Cement	65997-15-1	45-60
Quartz	Silicon Dioxide, Silica Sand	14808-60-7	40-55

* Portland cement typically contains about 0.5 ppm of Cr(VI) which may affect sensitized individuals to dermatitis.

SECTION 4: FIRST AID MEASURES

Inhalation:	If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms call poison center or doctor.
Eye Contact:	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.
Skin Contact:	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 if irritation develops. Wash contaminated clothing before reuse.
Ingestion:	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.
General Advice:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
Note to Physicians:	Symptoms may not appear immediately. Treat symptomatically.

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.
Sensitivity to Static Discharge:	This material is sensitive to static discharge at temperatures at or above the flash point.

MEANS OF EXTINCTION

Suitable Extinguishing Media:	Small Fire: Dry chemical, CO_2, or water spray. Large Fire: Dry chemical, CO_2, 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.
Unsuitable Extinguishing Media:	Not available
Product of Combustion:	Non-combustible
Protection of Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	Use personal protective equipment. Ensure adequate ventilation. Keep people from spill. Avoid dust formation.
Personal Precautions:	Avoid inhalation of dust. Do not get into eyes, on skin, or clothing.

Environmental Precautions: The environmental impact of this product has not been fully investigated.

Methods for Containment: Cover powder spill with plastic sheet or tarp to minimize spreading. Collect this material into a disposal container by sucking or sweeping up.

Methods for Cleanup: Pick up and transfer to properly labeled containers.

Other Information: See Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Handling: Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Prevent contact with skin, eyes, and clothing. Wash thoroughly after handling.

Storage: Keep containers tightly closed in a cool, dry, and well-ventilated place. Store locked up.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	ACGIH TLV	OSHA PEL
Portland Cement	65997-15-1	TWA: 1mg/m^3 particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	TWA: 15 mg/m^3 total dust TWA: 5 mg/m^3 respirable fraction (vacated) TWA: 10 mg/m^3 total dust (vacated) TWA: 5 mg/m^3 respirable fraction TWA: 50 mppcf, <1% Crystalline silica
Quartz*	14808-60-7	TWA: 0.025mg/m^3 respirable fraction	TWA: 0.050 mg/m^3 AL: 0.025 mg/m^3

PEL: Permissible Exposure Limit TLV: Threshold Limit Value AL: Actionable Level

*Respirable (< 6 micron) fraction for product is <0.1%

Engineering Controls Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection: Tightly fitting safety goggles

Hand Protection: Impervious gloves. Impervious clothing.

Skin and Body Protection: Impervious gloves. Impervious clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant

concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Gray, finely ground solid powder
Color:	Gray
Odor:	Mild
Odor Threshold:	None
Physical State:	Solid, powder
pH:	12 when mixed with water
Melting Point / Freezing Point:	> 1,832°F (1,000°C)
Initial Boiling Point:	Not Available
Boiling Point:	> 3,632°F (2,000°C)
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Flammability (solid, gas):	Not Applicable
Lower Flammability Limit:	Not Applicable
Upper Flammability Limit:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	2.7 – 3.1
Solubility:	Slight 0.2-0.5%
Partition Coefficient: n-Octanol/Water:	Not Applicable
Auto-ignition Temperature:	Not Applicable
Decomposition Temperature:	Not Available
Viscosity:	Not Applicable
Percent Volatile, wt.%:	0
VOC Content, wt.%:	0
Density:	2.7 – 3.1 g/cc
Coefficient of Water/Oil Distribution:	Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: None under normal processing.

Conditions to Avoid: Exposure to water – product may harden on contact with water. Manage dust formation during usage.

Incompatible Materials: Strong acids

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product information

Inhalation: Irritating to respiratory system. Irritating to mucous membranes.

Eye contact: Risk of serious damage to eyes.

Skin contact: Irritating to skin. May cause allergic skin reaction. May cause alkali burns.

Ingestion: Harmful if swallowed.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Portland Cement	Not Available	Not Available	Not Available

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Quartz	500 – 22,500 mg/kg (Rat)	Not Established	Not Established*

*LCL50: 0.3 mg/m3 / 10Y (Human)

Symptoms related to the physical, chemical and toxicological characteristics: No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization: May cause sensitization by skin contact.

Mutagenic Effects: No information available.

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen. Crystalline silica (quartz) has been classified by the International Agency for Research on Cancer (IARC) as a known human carcinogen (Group 1). May cause cancer by inhalation.

Chemical Name	ACGIH	IARC	NTP	OSHA
Quartz	A2*	Group 1	Known	X

*The respirable fraction as a whole is less than 0.1% and anticipated usage would generate far less than 0.1% as a respirable quantity above exposure guidelines as noted in Section 8.

ACGIH: (American Conference of Governmental Industrial Hygienists):	A2 - Suspected Human Carcinogen
IARC: (International Agency for Research on Cancer):	Group 1 - Carcinogenic to Humans
NTP: (National Toxicity Program):	Known Carcinogen
OSHA: (Occupational Safety & Health Administration):	X - Present
Reproductive Toxicity:	No information available.
STOT - single exposure:	May cause respiratory irritation.
STOT - repeated exposure:	Causes damage to organs through prolonged or repeated exposure if inhaled. Lungs.
Chronic Toxicity:	Inhalation overexposure to free crystalline silica may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease.
Aspiration Hazard:	No information available.

Numerical measures of toxicity - Product

The following values are calculated based on chapter 3.1 of the GHS document:	LD 50 Oral: 500 mg/kg; Acute toxicity estimate

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:	The environmental impact of this product has not been fully investigated.
Aquatic Toxicity:	The environmental impact of this product has not been fully investigated. Portland cement contains up to about 3-5% calcium oxide. Calcium Oxide (1305-78-8): • 96 hour LC50 freshwater fish – Species: Cyprinus carpio =1070 mg/l (static) • Chronic 46 day NOEC freshwater fish – Species: Oreochromis niloticus juvenile (fledgling, hatchling, weanling) = 100 mg/l
Persistence and Degradability:	No information available.
Bio-accumulative Potential:	Does not accumulate in organisms
Mobility in Soil:	No further relevant information available

Ecotoxical Effects

Remark:	No information available.
Additional Ecological Information	No information available.
General Notes:	This statement was deduced from products with a similar structure or composition. Due to available data on eliminability/decomposition and bio-accumulation potential prolonged term damage of the environment cannot be excluded. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Addition of water to cement creates an alkaline pH of between 12-13. Cured product is inert. Common to concrete construction around waterways, particular concern should be given to best practices to avoid/minimize spillage/discharge to the nearby environment as best as possible. In the case of significant spillage in confined or restricted areas, pH may increase to a level toxic to fish and aquatic organisms.
PBT Assessment:	Not Available
vPvB Assessment:	Not Available
Other Adverse Effects:	No further relevant information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Recommendation:	This material as supplied is not a hazardous waste according to Federal regulations (40CFR261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered.
Uncleaned Packaging Recommendation:	Disposal must be made according to official regulations. Do not re-use empty containers.

SECTION 14: TRANSPORT INFORMATION

US DEPARTMENT of TRANSPORTATION (DOT)	
Proper Shipping Name:	Not Regulated
Class:	Not Applicable
UN #:	Not Applicable
Packing Group:	Not Applicable
CANADA Transportation of Dangerous Goods (TDG)	
Proper Shipping Name:	Not Regulated
Class:	Not Applicable
UN #:	Not Applicable

Packing Group:	Not Applicable
INTERNATIONAL AIR TRANSPORTATION Proper Shipping Name (ICAO/IATA):	Not Regulated
Class:	Not Applicable
UN#:	Not Applicable
Packing Group:	Not Applicable
WATER TRANSPORTATION Proper Shipping Name (IMO/IMDG):	Not Regulated
Class:	Not Applicable
UN #:	Not Applicable
Packing Group:	Not Applicable
Marine Pollutant:	Not Applicable

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.

U.S. FEDERAL REGULATIONS Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the CFR, Part 372.

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

SARA 311/312 Hazard Categories

Acute health hazard – Yes
Chronic Health hazard – Yes
Fire Hazard – No
Sudden Release of Pressure – No
Reactive Hazard – No

US STATE Right to Know Regulations

Chemical Name	NJ	MA	PA	IL	RI
Portland Cement	X	X	X		X
Quartz	X	X	X		X

California This product contains the following Proposition 65 chemicals:

California Prop 65:

Chemical Name: Quartz, CAS No 14808-60-7, CA Prop. 65: Carcinogen

Chemical Name: Chromium, CAS No 18450-29-9, CA Prop 65: Birth defects or other reproductive harm

SECTION 16: OTHER INFORMATION

HMIS Rating:

Health	Flammability	Physical Hazard	Personal Protection
1	0	1	E, X

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