



# Material Safety Data Sheet

## GFRC (Glass Fiber Reinforced Concrete)

### SECTION 1 CHEMICAL PRODUCT AND IDENTIFICATION

**PRODUCT(S):** GFRC; molded Glass Fiber Reinforced Concrete  
**COMMON NAME / CHEMICAL FAMILY:** Glass Fiber Reinforced Concrete; GFRC  
**SYNONYMS:** GRC; Glassfiber Reinforced Concrete

### SECTION 2 HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** These products are sold as "manufactured articles" and do not represent a hazard under normal use – see Section 16, Regulatory Information. Hazards listed are associated with the nature of the raw materials used in the manufacture of this product and not the actual manufactured article. Exposure to dust from cutting, grinding or otherwise altering these products may irritate the skin, eyes, nose, throat or upper respiratory tract.

#### POTENTIAL HEALTH EFFECTS

**Eye Contact :** Eye contact with airborne dust may cause immediate or delayed irritation or inflammation. Eye exposure may require immediate first aid treatment and medical attention to prevent damage to the eye.  
**Inhalation:** Breathing dust generated from machining this product or handling may cause nose, throat or lung irritation including coughing or choking depending on the degree of exposure. Prolonged and repeated exposure to air borne free respirable crystalline silica can result in lung disease (i.e. Silicosis) and/or lung cancer. Crystalline silica is classified by IARC and NTP as a known human Carcinogen  
**Skin Contact:** Skin contact with dust or glass fibers may cause irritation, dry skin, or abrasion.  
**Ingestion:** None known

### SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

MATERIAL	WT. %	CAS #
Calcium Salts (as listed) - Portland cement	45-50%	
3CaO.SiO <sub>2</sub> ;		12168-85-3
2CaO.SiO <sub>2</sub> ;		10034-77-2
3CaO.Al <sub>2</sub> O <sub>3</sub> ;		12042-78-3
4CaO.Al <sub>2</sub> O <sub>3</sub> ;		12068-35-8
CaSO <sub>2</sub> .2H <sub>2</sub> O ;		13397-24-5
Sand, Crystalline Silica - (WT% represents total silica, not respirable portion.)	40-45%	14808-60-7
AR glass - glass fiber	5%	65997-17-3
Black Iron Oxide - color pigment	0-5%	1317-61-9
Iron Oxides - color pigment	0-5%	1332-37-2
Titanium Dioxide - color pigment	0-5%	13463-67-7
Blue Pigment	0-5%	57455-37-5
Wood or Steel (for reinforcement)	1-3	

## SECTION 4 CALIFORNIA PROPOSITION 65 WARNING

This product is fabricated from materials which may contain chemicals or properties known to the State of California to cause cancer and birth defects or other reproductive harm.

## SECTION 5 FIRST AID MEASURES

**Eye Contact:** Flush eyes thoroughly with water for at least 15 minutes, including under eye lids, to remove all particles. Seek medical attention for abrasions.

**Inhalation:** Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

**Skin Contact:** Wash with mild soap and water. Consult physician if irritation persists ..

**Ingestion:** Seek medical attention.

## SECTION 6 FIRE FIGHTING MEASURES

**General Fire Hazards:** None Known

**Extinguishing Media:** Water or use extinguishing media appropriate for surrounding fire.

**Unusual Fire/Explosion Hazards:** None Known

**Hazardous Combustion Products:** None Known

**Flashpoint & Method:** Non-combustible

**Fire Fighting Procedures:** Wear appropriate personal protective equipment.. See Section 8.

## SECTION 7 ACCIDENTAL RELEASE MEASURES

**General:** These solid molded articles do not represent a spill hazard. Avoid actions that cause dust from damaged articles from becoming airborne. Avoid inhalation of dust. Wear appropriate protective equipment as described in Section 9.

**Waste Disposal:** Follow federal, state or provincial, and local regulations for solid waste materials disposal. This material is not classified as hazardous waste material and depending on applicable regulations can be considered as inert waste or as common industrial waste ..

## SECTION 8 HANDLING AND STORAGE

**Handling:** Molded cement articles can be very heavy and awkward to lift and install posing risks such as sprains and strains to the back, arms and legs. Use proper lifting and handling techniques. If cutting and grinding or similar operations are required, minimize dust generation and accumulation. Avoid breathing dust. Wear appropriate protective equipment, see Section 9. Use good safety and industrial hygiene practices.

**Storage:** Protect products from weather and store in a cool, dry, ventilated area away from moisture.

## SECTION 9 EXPOSURE CONTROLS/PERSONAL PROTECTION

MATERIAL	WT. %	OSHA - PEL (mg/m <sup>3</sup> )
Portland Cement - (Calcium salts)	45-50%	15(T) / 5(R)
Sand, Crystalline Silica (Quartz)	40-45%	[(10)/(100SiO <sub>2</sub> + 2)] (R) [(30)/(100SiO <sub>2</sub> + 2)] (T)
Glass Fiber - E glass	4-5%	15(T) / 5(R) <sup>2</sup>
Color Pigments	0-5%	10
Particulate otherwise not regulated or established	-	15(T) / 5(R)
Wood or Steel (for reinforcement)	1-3	

The weight % of silica sand represents total quartz and not the respirable portion.  
OSHA-PEL Occupational Health and Safety Administration - Permissible Exposure Limit  
(T)-Total; (R) Respirable

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**Engineering Controls:** If user operations generate dust, provide ventilation to keep dust levels below permissible exposure limits. When general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to keep dust levels below permissible exposure limits.

### Personal Protection Equipment (PPE)

**General:** Selection of Personal Protection Equipment will depend on operations and environmental working conditions.

**Respiratory Protection:** Under ordinary conditions, no respiratory protection is required. Wear a NIOSH approved respirator that is properly fitted when exposed to dust levels above exposure limits.

**Eye / Face Protection:** Wear safety glasses, goggles or face shields to avoid contact with dust or larger particles.

**Skin Protection:** Wear gloves and protective clothing to prevent repeated or prolonged skin contact. Remove clothing and protective equipment that becomes dusty and launder before reusing.

## SECTION 10 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid articles	Specific Gravity	2.1 - 2.3
Appearance	Range of colors	Bulk Density	7 - 7.5 lbs./ft. <sup>2</sup>
Odor	Low to no odor	Particle Size	Varies
Melting Point	Not Applicable	Solubility in water	Not Applicable
Freezing Point	Not Applicable	Evaporation rate	Not Applicable
Boiling point	Not Applicable	Vapor Density	Not Applicable
Flash Point	Not Applicable	Vapor Pressure	Not Applicable

## SECTION 11 CHEMICAL STABILITY AND REACTIVITY

**Stability:** Stable

**Conditions to Avoid:** Contact with incompatibles (see below)

**Incompatibility:** Some ingredients have incompatibilities. Silica sand dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates also react with powerful oxidizers such as fluorine and chlorine trifluoride. Iron oxide pigments, if any, are incompatible with hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride and powerful oxidizers.

**Hazardous Polymerization:** None known

**Hazardous Decomposition:** None known

## SECTION 12 TOXICOLOGICAL INFORMATION

**Acute Effects:** None Known

**Chronic Effects / Carcinogenicity:** Crystalline Silica is classified by IARC and NTP as a known human carcinogen and relates to the respirable portion of the raw material itself. Exposures to respirable crystalline silica are not expected under ordinary handling and use of this product(s). Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e. Silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration. Titanium Dioxide is considered possibly carcinogenic (group 2B) by IARC. Iron Oxides are not considered a carcinogen by IARC, NTP and others but prolonged inhalation of iron oxide dust is known to produce a condition known as siderosis. The exposure limits are set to protect against siderosis.

**California Proposition 65 Warning:** This product is fabricated from materials which may contain chemicals or properties known to the State of California to cause cancer and birth defects or other reproductive harm.

## SECTION 13 ECOLOGICAL INFORMATION

**Environmental Toxicity:** This product has no known adverse effect on ecology.

## SECTION 14 DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** This material is not classified as hazardous waste material and depending on applicable regulations can be considered as inert waste or as common industrial waste and as such can be buried in landfills approved for these categories. Dispose of material in accordance with federal, state or provincial, and local regulations.

## SECTION 15 TRANSPORTATION INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TOG regulations.

## SECTION 16 REGULATORY INFORMATION

Many countries have legislation that requires chemical producers or suppliers to prepare MSDSs. In Canada, this legislation is generally called WHMIS (Workplace Hazardous Materials Information System). In the US, the OSHA Hazard Communication Rule (29 CFR 1900.1200) prescribes what information is to be provided by MSDS. This MSDS has been prepared in the 16 section format consistent with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Other agencies utilizing this format include the American National Standards Institute (ANSI)- American National Standard for Hazardous Industrial Chemicals, the International Organization for Standardization (ISO), the European Union (EU), and the International Labour Organization (ILO).

With respect to the products that are the subject of this MSDS, the WHMIS requirements of the Hazardous Products Act and Controlled Products Regulations do NOT apply to products classified as "manufactured articles". Section 11 of the Hazardous Products Act indicates by definition that a "manufactured article" means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, under normal conditions of use, will not release or otherwise cause a person to be exposed to a controlled product. In this definition, "exposure" means in a sufficient quantity to pose a hazard. Exposure is limited to the toxicological hazards and means potential for physical contact that could result in damage or potential for entry into the body by a route that could cause harm. "Normal condition of use" does not include an installation process. The subject products fall within the scope of this definition and as "manufactured articles" do not require a MSDS. The information provided in this MSDS relates to the nature of the raw materials used to make the manufactured articles.

## SECTION 17 OTHER INFORMATION

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS												
HMIS Ratings	HEALTH	* 1	0 = Minimal Hazard	<table border="1" style="border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">NFPA Ratings</th> </tr> <tr> <td style="padding: 2px;">Health</td> <td style="text-align: center; padding: 2px;">1</td> </tr> <tr> <td style="padding: 2px;">Fire</td> <td style="text-align: center; padding: 2px;">0</td> </tr> <tr> <td style="padding: 2px;">Reactivity</td> <td style="text-align: center; padding: 2px;">0</td> </tr> </table>	NFPA Ratings		Health	1	Fire	0	Reactivity	0
	NFPA Ratings											
	Health	1										
	Fire	0										
	Reactivity	0										
FLAMMABILITY	0	1 = Slight Hazard										
PHYSICAL HAZARD	0	2 = Moderate Hazard										
PERSONAL PROTECTION	E	3 = Serious Hazard										
		4 = Severe Hazard										
												
E - Safety glasses, gloves and dust respirator ; * - Chronic												

The information contained in this document is based on the knowledge known at the date shown and is provided in good faith. It is the users responsibility to satisfy oneself as to the suitability and completeness of this information for his/her own particular use. Users assume full responsibility for applying the appropriate safety measures when the product is used.

Abbreviations			
CAS	Chemical Abstracts Service	NIOSH	National Institute for Occupational Safety and Health
CPR	Controlled Products Regulations	OSHA	Occupational Health and Safety Administration
DOT	US Department of Transportation	PEL	Permissible Exposure Limit
HMIS	Hazardous Materials Identification System	PPE	Personal Protective Equipment
IARC	International Agency for Research on Cancer	WHMIS	Workplace Hazardous Materials Information System