SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Identifier:	Densfil
Other Means of Identification – Synonyms:	Rouge, Red Iron Oxide, Hematite.
Recommended Use:	Drilling Fluid Additive
Recommended Restrictions:	None known
Supplier:	Bri-Chem Supply Ltd. 27075 Acheson Road Acheson, AB T7X 6B1
Phone Number:	780-962-9490
Emergency Number:	CHEMTREC (800) 424-9300

Section 2: HAZARD(S) IDENTIFICATION

Physical Hazards:	Not classified
Health Hazards:	Not classified
Environmental Hazards:	Not classified
Label Elements	
Hazard Symbol:	None
Signal Word:	None
Hazard Statement:	This mixture does not meet the criteria for classification.
Precautionary Statement	
Prevention:	Observe good industrial hygiene practices.
Response:	Wash hands after handling.
Storage:	Store away from incompatible materials.
Disposal:	Dispose of waste and residues in accordance with local authority requirements.
Other Hazards:	None known
Supplemental Information:	None

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures

Chemical Name	Common Name and Synonyms	CAS Number	%
Hematite (Fe_2O_3)		1317-60-8	95 - 99
Other components below reportable levels			4.53

Impurities

Chemical Name	Common Name and Synonyms	CAS Number	%
Aluminum Oxide		1344-28-1	0.425
Calcium Oxide		1305-78-8	0.115
Phosphorus Pentoxide		1314-56-3	0.1
Magnesium Oxide		1309-48-4	0.05
Crystalline Silica		14808-60-7	0.0187

CLP: Regulation No. 1272/2008

DSD: Directive 67/548/EEC

M: M-factor

vPvB: Very persistent and very Bioaccumulative Substance

PBT: Persistent, Bioaccumulative and Toxic Substance

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. #: This substance has been assigned Community workplace exposure limit(s).

Section 4: FIRST-AID MEASURES

Inhalation: Move to fresh air. Get medical attention, if needed. Call a physician if symptoms develop or persist.

Skin Contact: Remove and isolate contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Wash off with soap and water. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye Contact: Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Flush eyes immediately with large amounts of water. Rinse with water. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. Get medical attention if irritation develops and persists.

Ingestion:	Rinse mouth. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. If ingestion of a large amount does occur, call a poison control center immediately. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.
Most Important Symptoms/Effects, Acute and Delayed:	Dusts may irritate the respiratory tract, skin and eyes.
Indication of Immediate Medical Attention and Special Treatment Needed:	Treat symptomatically. Symptoms may be delayed.
General Information:	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Section 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2).
Unsuitable Extinguishing Media:	Do not use water jet as an extinguisher, as this will spread the fire.
Specific Hazards Arising from The Chemical:	During fire, gases hazardous to health may be formed.
Special Protective Equipment and Precautions for Firefighters:	Firefighters should wear full protective clothing including self contained breathing apparatus. Wear suitable protective equipment. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire Fighting Equipment/Instructions:	Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.
Specific Methods:	Use standard firefighting procedures and consider the hazards of other involved materials.
General Fire Hazards:	No unusual fire or explosion hazards noted.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed

	spaces before entering them. For personal protection, see Section 8 of the SDS.
Methods and Materials for Containment and Cleaning Up:	Stop the flow of material, if this is without risk. Collect dust using a vacuum cleaner equipped with HEPA filter. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see Section 13 of the SDS.
Environmental Precautions:	Avoid discharge into drains, water courses or onto the ground.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:	Minimize dust generation and accumulation. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not get this material in contact with eyes. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. When using do not eat or drink. Do not use in areas without adequate ventilation. Wash thoroughly after handling. Practice good housekeeping.
Conditions for Safe Storage, Including any Incompatibilities:	Keep away from heat, sparks and open flame. Store in a closed container away from incompatible materials. Store in original tightly closed container. Store in a well-ventilated place. Keep out of the reach of children. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the SDS).

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits

US. ACGIH Threshold Limit Values

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.025 mg/m³	Respirable fraction
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m³	Inhalable fraction
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	TWA	1 mg/m³	Respirable fraction

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.025 mg/m³	Respirable particles
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m³	Fume
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	TWA	10 mg/m³	

Canada. British Columbia OELs (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.025 mg/m³	Respirable fraction
Magnesium Oxide (CAS 1309-48-4)	STEL	10 mg/m³	Respirable dust and/or fume
	TWA	3 mg/m³	Respirable dust and/or fume
		10 mg/m³	Inhalable fume
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	TWA	1 mg/m³	Respirable

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety and Health Act)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.025 mg/m³	Respirable fraction
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m³	Inhalable fraction
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide	TWA	1 mg/m³	Respirable fraction

(CAS 1344-28-1)

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.1 mg/m³	Respirable
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m³	Inhalable fraction
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	TWA	1 mg/m³	Respirable fraction

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.1 mg/m³	Respirable dust
Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m³	Fume
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	TWA	10 mg/m³	Total dust

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Impurities	Type	Value	Form
Magnesium Oxide (CAS 1309-48-4)	PEL	15 mg/m³	Total particulate
Calcium Oxide (CAS 1305-78-8)	PEL	5 mg/m³	
Aluminum Oxide (CAS 1344-28-1)	PEL	5 mg/m³	Respirable fraction
		15 mg/m³	Total dust

US. OSHA Table Z-3 (29 CFR 1910.1000)

Impurities	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.3 mg/m³	Total dust
		0.1 mg/m³	Respirable
		2.4 mppcf	Respirable

Biological Limit Values:	No biological exposure limits noted for the ingredient(s).
Appropriate Engineering Controls:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual Protection Measures, Such as Personal Protective Equipment

Eye/Face Protection:	Wear safety glasses with side shields (or goggles). Do not get in eyes. Eye wash fountain is recommended.
Skin Protection	
Hand Protection:	For prolonged or repeated skin contact use suitable protective gloves. Wear protective gloves. Not normally needed.
Other:	Wear suitable protective clothing
Respiratory Protection:	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Wear respirator with dust filter.
Thermal Hazards:	Wear appropriate thermal protective clothing, when necessary.
General Hygiene Considerations:	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State:	Solid
Form:	Powder
Color:	Not available
Odor:	Not available

Odor Threshold:	Not available
pH:	Not available
Melting Point/Freezing Point:	2849 °F (1565 °C) estimated
Initial Boiling Point and Boiling Range:	Not available
Flash Point:	Not available
Evaporation Rate:	Not available
Flammability (Solid, Gas):	Not available
Upper/Lower Flammability of Explosive Limits	
Flammability Limit – Lower (%)	Not available
Flammability Limit – Upper (%)	Not available
Explosive Limit – Lower (%):	Not available
Explosive Limit – Upper (%):	Not available
Vapor Pressure:	Not available
Vapor Density:	Not available
Relative Density:	Not available
Solubility(ies)	
Solubility (Water):	Not available
Partition Coefficient (n-octanol/water):	Not available
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

Section 10: STABILITY AND REACTIVITY

Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No dangerous reaction known under conditions of normal use.
Conditions to Avoid:	Heat, flames and sparks. Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents

Hazardous Decomposition Products:	No hazardous decomposition products are known.

Section 11: TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation:	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin Contact:	Dust or powder may irritate the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye Contact:	Harmful in contact with eyes. Dust may irritate the eyes.
Ingestion:	May cause discomfort if swallowed. Expected to be a low ingestion hazard. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms Related to The Physical, Chemical and Toxicological Characteristics:	Dusts may irritate the respiratory tract, skin and eyes.

Information on Toxicological Effects

Acute Toxicity:	Not available
Skin Corrosion/Irritation:	Due to partial or complete lack of data the classification is not possible. Prolonged skin contact may cause temporary irritation.
Serious Eye Damage/Eye Irritation:	Harmful in contact with eyes. Direct contact with eyes may cause temporary irritation. Due to partial or complete lack of data the classification is not possible. None known.

Respiratory or Skin Sensitization

Canada – Alberta OELs: Irritant

Calcium Oxide (CAS 1305-78-8)	Irritant

Respiratory Sensitization:	Due to partial or complete lack of data the classification is not possible. Not a respiratory sensitizer.
Skin Sensitization:	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. None known. This product is not expected to cause skin sensitization. Due to partial or complete lack of data the classification is not possible.
Germ Cell Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Due to partial or complete lack of data the classification is not possible.

Carcinogenicity:	Not classifiable as to carcinogenicity to humans. Due to partial or complete lack of data the classification is not possible.

ACGIH Carcinogens

Aluminum Oxide (CAS 1344-28-1)	A4 - Not classifiable as a human carcinogen
Crystalline Silica (CAS 14808-60-7)	A2 - Suspected human carcinogen
Magnesium Oxide (CAS 1309-48-4)	A4 - Not classifiable as a human carcinogen

Canada - Alberta OELs: Carcinogen Category

Crystalline Silica (CAS 14808-60-7)	Suspected human carcinogen

Canada - Manitoba OELs: Carcinogenicity

Aluminum Metal and Insoluble Compounds, Respirable Fraction (CAS 1344-28-1):	Not classifiable as a human carcinogen
Magnesium Oxide, Inhalable Fraction (CAS 1309-48-4):	Not classifiable as a human carcinogen
Silica, Crystalline-Alpha-Quartz, Respirable Fraction (CAS 14808-60-7)	Suspected human carcinogen

Canada - Quebec OELs: Carcinogen Category

Crystalline Silica (CAS 14808-60-7)	Suspected carcinogenic effect in humans

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline Silica (CAS 14808-60-7)	1 Carcinogenic to humans
Hematite (Fe2O3) (CAS 1317-60-8)	3 Not classifiable as to carcinogenicity to humans

Reproductive Toxicity	Not classified. This product is not expected to cause reproductive or developmental effects. Due to partial or complete lack of data the classification is not possible.
Specific Target Organ Toxicity – Single Exposure:	Due to partial or complete lack of data the classification is not possible. Not classified.
Specific Target Organ Toxicity – Repeated Exposure:	Not classified. Due to partial or complete lack of data the classification is not possible.
Aspiration Hazard:	Due to partial or complete lack of data the classification is not possible. Not an aspiration hazard.
Chronic Effects:	Not expected to be hazardous by WHMIS criteria. Hazardous by OSHA criteria. Prolonged inhalation may be harmful.
Further Information:	This product has no known adverse effect on human health.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Not expected to be harmful to aquatic organisms. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and Degradability:	No data is available on the degradability of this product.
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions:	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.
Local Disposal Regulations:	Dispose in accordance with all applicable regulations.
Hazardous Waste Code:	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from Residues/Unused Products:	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated Packaging:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14: TRANSPORT INFORMATION

TDG:	Not regulated as dangerous goods
IATA:	Not regulated as dangerous goods
IMDG:	Not regulated as dangerous goods
Transport in Bulk According to Annex II of MARPOL 73/78 and The IBC Code:	Not applicable

Section 15: REGULATORY INFORMATION

Canadian Regulations:	This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.
Controlled Drug and Substances Act:	Not regulated
Export Control List (CEPA 1999, Schedule 3)	Not listed
Greenhouse Gases:	Not listed
Precursor Control Regulations:	Not regulated
International Regulations:	The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. The product does not need to be labelled in accordance with EC directives or respective national laws.
Stockholm Convention:	Not applicable
Rotterdam Convention:	Not applicable
Kyoto Protocol:	Not applicable
Montreal Protocol:	Not applicable
Basel Convention:	Not applicable

International Inventories

Country(s) or Region	Inventory Name	On Inventory (Yes/No) *
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or Region	Inventory Name	On Inventory (Yes/No) *
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Phillippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Section 16: OTHER INFORMATION

References:

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
GOST 30333-2007 - Chemical production safety passport. General requirements
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial
Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on
the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor
(MOL) Public Notice No. 1986-45, as amended)

Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
JIS Z 7252:2014 Classification of chemicals based on “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)”
JIS Z 7253:2012 Hazard communication of chemicals based on GHS – Labelling and Safety Data Sheet (SDS)

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Prepared by:	**Bri-Chem Supply Ltd.**
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