

SAFETY DATA SHEET (SDS)

OSHA Hazard Communication Standard 29 CFR 1910.1200. Prepared to GHS

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **Free Flow 100®FS**

Product CAS: None

Recommended use: Stabilize RCRA Metals

Company Identification:

Free Flow Technologies, Inc.
4920 Forest Hills Rd, Suite 200
Loves Park, Illinois 61111

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SECTION 2 – HAZARD(S) IDENTIFICATION

GHS07 Acute Toxicity

Classification of the substance:

- H302 Acute Toxicity, category 4 (oral)
- H313 Acute Toxicity, category 5 (dermal)
- H332 Acute Toxicity, category 4 (inhalation)
- H315 Skin, eye irritation, category 2
- H317 Skin sensitization, category 1
- H319 Serious eye damage, category 2A
- H335 Specific Target Organ Toxicity, category 3 (single exposure, respiratory tract irritation)



WARNING

Hazard Statements:

- H302 May be harmful if swallowed
- H313 May be harmful in contact with skin
- H332 Harmful if inhaled
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation

Precautionary Statements:

Prevention

- P261 Avoid breathing dust.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.

SECTION 2 – HAZARD(S) IDENTIFICATION (CONT.)

- Prevention cont.** P280 Wear protective gloves, safety glasses, and protective clothing such as long sleeves and pant cuffs over shoes to minimize skin contact.
- Response**
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P321 Specific treatment, see supplemental first aid information.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
- Storage/Disposal**
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of container in accordance with local, regional, national, and/or international regulations.

Hazards Ratings HMIS

HEALTH	1
FLAMMABILITY	0
REACTIVITY	1
PERSONAL PROTECTION	0

SECTION 3 – COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Name	CAS	Approx. % (w/w)	LD50	LC50
Calcium Oxide	1305-78-8	10 - 60	Not Available	Not Available
Sulfur	7704-34-9	10 - 25	Not Available	Not Available
Ferrous Sulfate Monohydrate	17375-41-6	5-50	Rat, oral, 237 mg/kg	Not Available
Silicon Dioxide	60676-86-0	5 - 10	Not Available	Not Available
Aluminum Oxide – Non-fibrous	1344-28-1	1 - 5	Not Available	Not Available
Iron Oxide	1309-37-1	1 - 5	Rat, oral, >5000 mg/kg	Not Available
Sodium Bicarbonate	144-55-8	0 - 70	Mouse, oral, 3360 mg/kg	Not Available
Magnesium Oxide	1309-48-4	0 - 60	Not Available	Not Available

SECTION 4 – FIRST AID MEASURES

- After Eye Contact:** Flush eyes with water while lifting lids. Seek medical attention.
- After Skin Contact:** Wash skin with soap and water, remove contaminated clothing and shoes. If irritation develops, seek medical attention.
- After Ingestion:** Dilute with water, fruit juice or vinegar. Seek medical attention.
- After Inhalation:** Remove to fresh air, if irritation develops, seek medical attention.

Most important symptoms and effects, both acute and delayed.

Refer to Section 11 – Toxicological Information

Indication of any immediate medical attention and special treatment needed.

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing equipment:

This material is noncombustible.

Extinguishing equipment that is not appropriate for a particular situation:

Do not use water on adjacent fires. Extinguish adjacent fires with dry chemical or CO₂.

Specific hazards that develop from the chemical during the fire:

No specific hazards are identified.

Protective equipment or precautions for firefighters:

No special measures required.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment to prevent skin exposure and inhalation. Keep unprotected persons away.

Environmental Precautions:

Avoid runoff to waterways and sewers.

Methods and materials used for containment and cleanup:

Use appropriate protective equipment while using dry cleanup methods (sweep/shovel) which minimize dusting. Reclaim in watertight containers. Small amounts may be flushed with water to drain.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling:

Swells when wet, may expand the container. Keep eyewash bottles available throughout work area.

Conditions for safe storage, including any incompatibilities:

Store away from water or acids.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

Component	Formula	CAS	PEL	TLV
Calcium Oxide	CaO	1305-78-8	5 mg/m ³	2 mg/m ³
Sulfur	S	7704-34-9	Not established	Not established
Silicon Dioxide**	SiO ₂	60676-86-0	0.1 mg/m ³ *	0.1 mg/m ³ *
Aluminum Oxide	Al ₂ O ₃	1344-28-1	10 mg/m ³ +	10 mg/m ³ +
Iron Oxide**	Fe ₂ O ₃	1309-37-1	15 mg/m ³	5 mg/m ³
Ferrous Sulfate	FeSO ₄	17375-41-6	Not established	1 mg/m ³
Sodium Bicarbonate	NaHCO ₃	144-55-8	15 mg/m ³ *	10 mg/m ³ *
Magnesium Oxide	MgO	1309-48-4	15 mg/m ³ *	10 mg/m ³ *

* Respirable Dust

+ 5 mg/M³ as Respirable Fraction

**Silicon Dioxide and Iron Oxide are listed by IARC as potential carcinogens.

Exposure Controls

Engineering Controls:

Use general and local exhaust to keep dust levels within acceptable limits.

Personal Protective Equipment Pictograms:



Breathing Protection:

Use NIOSH approved dust respirator when exposure limits exceeded.

Hand Protection:

Wear gloves to minimize skin contact.

Eye Protection:

Wear tight fitting goggles.

Skin Protection:

Wear long sleeves, gloves, and pant cuffs over shoes to minimize skin contact.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White-gray powder.	Boiling Point:	N/A
Odor:	Odorless	Flammable, Lower Limit:	N/A
Odor Threshold:	N/A	Flammable, Upper Limit:	N/A
Solubility:	N/A	Flash Point:	N/A
Partition Coefficient:	Not determined.	Auto Ignition Temperature:	N/A
pH:	6.0 – 12.0	Freezing/Melting Point:	N/A
Density:	80 – 85 lbs/ft ³	Viscosity:	N/A
Vapor Pressure:	N/A	Decomposition Temp.:	N/A
Vapor Density:	N/A	Evaporation Rate:	N/A
Molecular Formula:	Mixture		

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:

No dangerous reactions known under conditions of normal use.

Chemical Stability:

Stable, keep dry.

Thermal decomposition/conditions to be avoided:

Avoid extreme temperatures.

Possibility of hazardous reactions:

Contains calcium oxide and may react with water or acid to produce heat.

Incompatible materials:

Water, strong acids.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological Effects

Component	Formula	LD50	LC50
Calcium Oxide	CaO	Not Available	Not Available
Sulfur	S	Not Available	Not Available
Silicon Dioxide**	SiO ₂	Not Available	Not Available
Aluminum Oxide	Al ₂ O ₃	Not Available	Not Available
Iron Oxide**	Fe ₂ O ₃	rat, oral, >5000 mg/kg	Not Available
Ferrous Sulfate	FeSO ₄	rat, oral, 237 mg/kg	Not Available
Sodium Bicarbonate	NaHCO ₃	mouse, oral, 3360 mg/kg	Not Available
Magnesium Oxide	MgO	Not Available	Not Available

**Silicon Dioxide and Iron Oxide are listed by IARC as potential carcinogens.

SECTION 11 – TOXICOLOGICAL INFORMATION (CONT.)

Routes of exposure

Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential health effects

Eye: Acute: May cause serious eye irritation
Chronic: No data available

Skin: Acute: Causes skin irritation
Chronic: Repeated and prolonged exposure may cause dermatitis

Ingestion: Acute: May cause irritation
Chronic: No data available

Inhalation: Acute: May cause respiratory irritation
Chronic: No data available

Symptoms from exposure

Target Organs: Eyes, respiratory passages, skin, digestive tract. Pre-existing respiratory diseases including asthma and emphysema may also be aggravated.

Eye: May cause painful irritation/inflammation and tissue damage.

Skin: May cause irritation to moist skin.

Ingestion: May cause ulceration to the digestive tract, vomiting, liver damage, tachycardia.

Inhalation: May cause irritation/inflammation to nasal and upper respiratory passages.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity:

No further relevant information available.

Persistence and degradability:

No further relevant information available.

Bioaccumulative potential:

No further relevant information available.

Mobility in soil:

No further relevant information available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Recommended Waste Treatment Methods:

No treatment necessary.

Recommended Package Disposal:

Dispose of in container in accordance with local, regional, national, and/or international regulations.

SECTION 14 – TRANSPORT INFORMATION

UN Number:	N/A
UN proper shipping name:	N/A
Transport Hazard class:	N/A
Packing group number:	N/A
Environmental hazards:	N/A
Special Precautions:	To prevent dust, cover product with tarp if not in bulk bag container.

SECTION 15 – REGULATORY INFORMATION

SARA Title III - Section 302 Extremely Hazardous Material - None

SARA Title III – Section 31/312 – Hazard Categories:

Fire Hazard – No
Sudden Release of Pressure – No
Reactivity Hazard – Yes
Immediate Health Hazard – Yes
Delayed Health Hazard - Yes

SARA Title III – Section 313 - This material is not subject to the toxic chemical reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SECTION 16 – ADDITIONAL INFORMATION

Information herein is based on data believed to be accurate at the time of the preparation. No warranty or representation, express or implied, is made to the accuracy or completeness of the SDS. No responsibility can be assumed by vendor for any damage or injury resulting from misuse, failure to follow recommended practices, or from any hazards inherent in the nature of the product.

SECTION 16 – ADDITIONAL INFORMATION (CONT.)

SDS Effective: 8/15/2016