

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: **Free Flow 100®**
Free Flow 300
Product CAS: None

Company Identification:

Free Flow Technologies, Inc.
9918 N. Alpine Road
Machesney Park, Illinois 61115

For information call: (815) 636-0166 or (866) 677-0166
Emergency Contact: Mike Slattery
Fax: (815) 636-0560

MSDS Effective: 12/28/11
Supersedes: NA

SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS</u>	<u>Approximate % (w/w)</u>
Phosphate Compounds	7758-23-8	5 - 80
Magnesium Oxide	1309-48-4	5 - 80
Calcium Oxide	1305-78-8	10 - 60
Sulfur	7704-34-9	10 - 25
Silicon Dioxide	60676-86-0	5 - 10
Aluminum Oxide - Non- fibrous	1344-28-1	1 - 5
Iron Oxide	1309-37-1	1 - 5

SECTION 3 – HAZARDS IDENTIFICATION

<u>Hazards Ratings</u>	<u>HMIS</u>
Health	1
Fire	0
Reactivity	1
Special Protection	E

POTENTIAL HEALTH EFFECTS

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

Eye: May cause irritation/inflammation and tissue damage.

Skin: May cause irritation and alkaline burns to moist skin.

SECTION 3 – HAZARDS IDENTIFICATION (CONT.)

- Ingestion: May cause ulceration to the digestive tract.
- Inhalation: May cause irritation/inflammation to nasal and upper respiratory passages. Inhalation of magnesium oxide fumes may cause metal fume fever, however no evidence of metal fume fever resulting from industrial exposure to magnesium oxide fume has been found. Symptoms of metal fume fever include; cough, tightness of chest, sweating, headache, fever, muscle aches, nausea, vomiting and tiredness.

SECTION 4 – FIRST AID MEASURES

- Eye: Flush eyes with water while lifting lids for at least 10 minutes. Seek medical attention.
- Skin: Wash skin with soap and water, remove contaminated clothing and shoes. If irritation develops, seek medical attention.
- Ingestion: Dilute with water, fruit juice or vinegar. Seek medical attention.
- Inhalation: Remove to fresh air, if irritation develops, seek medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

- Unusual Fire and Explosion Hazards: Noncombustible
- Special Fire Fighting Procedures: Do not use water on adjacent fires. Extinguish adjacent fires with dry chemical or CO₂. Water reacts exothermically with magnesium oxide to produce magnesium hydroxide and heat/steam. Avoid water contact in closed or restricted storage vessels as heat, swelling, and rupture of storage vessel may occur.
- | | | | |
|----------------------------|-----|------------------|-----|
| Extinguishing Media: | N/A | Flammable Limits | |
| Auto ignition Temperature: | N/A | Lower Limit: | N/A |
| Flash Point: | N/A | Upper Limit: | N/A |

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Disposal: Dispose as a non-hazardous solid waste in accordance with all Local, State and Federal regulations.
- Spills/Leaks: Use appropriate protective equipment while using dry cleanup methods (sweep/shovel) which minimize dusting. Reclaim in watertight containers for disposal. Use personal protective equipment as required.

SECTION 7 – HANDLING AND STORAGE

- Handling:** Avoid inhalation of dust. Clean area frequently to avoid dust build-up. Wear applicable personal protective equipment when handling.
- Storage:** Store in a dry area in sealed containers. Keep away from incompatible materials such as interhalogens and strong acids. Avoid contact with water – product reacts exothermically with water to form magnesium hydroxide and heat/steam. Water contact in closed or restricted storage vessels may cause heat swelling and possible rupture of storage vessel.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Engineering Controls:** Use general and local exhaust to keep dust levels within acceptable limits. Local exhaust ventilation with or without process enclosure is important where large quantities are handled, as in bagging operations.
- Eyes:** Wear safety goggles in high dust concentrations, unless full face-piece respiratory protection is worn.
- Skin:** Wear long sleeves, gloves, and pant cuffs over shoes to minimize skin contact.
- Respirators:** Use NIOSH approved dust respirator when exposure limits exceeded. If magnesium oxide fume is likely to be produced then ensure that a NIOSH/MSHA respirator approved for fumes is used. In conditions of oxygen deficiency, or where airborne concentrations exceed 100 mg/m³, wear positive pressure or pressure demand supplied air respiratory protection or SCBA.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White-gray-tan powder.	Boiling Point:	N/A
Odor:	No odor.	Freezing Point:	N/A
Physical State:	Solid	Melting Point:	Approx. 2800°C
pH:	11.0 – 12.0	Decomposition Temp.:	N/A
Vapor Pressure:	N/A	Specific Gravity:	3.09
Vapor Density:	N/A	Molecular Formula:	Mixture
Evaporation Rate:	N/A	Available Lime:	30.0 percent
Viscosity:	N/A		
Water Solubility (@20°C):	0.0006 g/100m		

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	Stable, keep dry.
Incompatibility:	Avoid contact with water. Contains calcium oxide and magnesium oxide and may react with water, strong acids, interhalogens, or phosphorous pentachloride to produce sufficient heat to ignite combustible materials.
Hazardous Decomposition Products:	Magnesium fume may be generated if heated to volatilization. Heat and steam may be generated upon contact with water. Could possibly release minor amounts of irritating fluoride if heated to extreme temperatures.
Hazardous Polymerization:	Does not occur.
Conditions to Avoid:	Extreme temperatures and contact with water.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological Information:

Component	Formula	% Wt.	CAS	PEL	TLV
Phosphate Compounds	Ca(H ₂ PO ₄) ₂ H ₂ O	5 – 80	7758-23-8	Not established	Not established
Magnesium Oxide	MgO	5 – 80	1309-48-4	15 mg/m ³	10 mg/m ³
Calcium Oxide	CaO	10 – 60	1305-78-8	5 mg/m ³	2 mg/m ³
Sulfur	SO ₃	10 – 25	7704-34-9	15 mg/m ³	10 mg/m ³
Silicon Dioxide	SiO ₂	5 – 10	60676-86-0	0.1 mg/m ³ *	0.1 mg/m ³ *
Aluminum Oxide	Al ₂ O ₃	1 - 5	1344-28-1	10 mg/m ³ +	10 mg/m ³ +
Iron Oxide	Fe ₂ O ₃	1 - 5	1309-37-1	15 mg/m ³	5 mg/m ³

* Respirable Dust

+ 5 mg/M³ as Respirable Fraction

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

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Information: None available

SECTION 13 – OTHER PRECAUTIONS

Other Precautions: None

SECTION 14 – TRANSPORT INFORMATION

DOT Label No: N/A

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.

Toxic Substance Control Act (TSCA) Inventory List 8(b) – Yes

Magnesium Oxide
Calcium Oxide
Aluminum Oxide
Iron Oxide

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 MSDS. 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.