

Material Safety Data Sheet

FOR INDUSTRIAL USE ONLY

ECOFLUX 142 MNL

1. Product and company identification

Product name	ECOFLUX 142 MNL
MSDS Number	300000016130
Product Type	Cleaning and Degassing
Product use	Drossing Flux
Manufacturer, Importer, Supplier	HA International, LLC 630 Oakmont Lane Westmont, IL 60559
Print date	07-AUG-2010
Telephone	For Emergency Medical Assistance Call Health & Safety Information Services, 1-866-303-6949 For Emergency Transportation Information CHEMTREC US Domestic (800) 424-9300 CHEMTREC International (703) 527-3887 CANUTEC CA Domestic (613) 996-6666 For additional health and safety or regulatory information, call (630)575-5722, or (630)575-5705.

2. Hazards identification

Form	Crystalline solid.
Odor	none.
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	WARNING ! DAMP MATERIAL MAY PRESENT AN EXPLOSION HAZARD WHEN ADDED TO MOLTEN METAL. NEVER ADD DAMP MATERIAL TO MOLTEN METAL. TOXIC IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

Potential acute health effects

Inhalation	Slightly irritating to the respiratory system.
Ingestion	Toxic if swallowed.
Skin	Slightly irritating to the skin.
Eyes	Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects	Contains material that can cause target organ damage. Absorption
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through skin, ingestion or inhalation can cause fluorosis.

Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Target organs	Contains material which causes damage to the following organs: blood, lungs, bones Review Section 2 and 11 for any additional assessments.

Over-exposure signs/symptoms

Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing, anemia, weight loss, brittleness of bones weakness and stiffness of joints
Ingestion	Adverse symptoms may include the following: anemia, weight loss, brittleness of bones weakness and stiffness of joints
Skin	Adverse symptoms may include the following: irritation, redness, anemia, weight loss, brittleness of bones weakness and stiffness of joints
Eyes	Adverse symptoms may include the following: irritation, watering, redness,
Medical conditions aggravated by over-exposure	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

3. Composition/Information on ingredients

<u>Ingredient name</u>	<u>CAS number</u>	<u>WT %</u>
Potassium Chloride	7447-40-7	50.0 - 70.0
Calcium Carbonate (CaCO ₃)	471-34-1	10.0 - 30.0
Silicate(2-), hexafluoro-, potassium (1:2)	16871-90-2	5.0 - 10.0

*** Any applicable Canadian trade secret numbers will be listed in Section 15.*

4. First aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If

unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first aid personnel	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician	Individuals reporting respiratory irritation following use should be assessed for potential minor exposure to HF and/or chlorine and treated accordingly. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Flammability of the product	This product is not flammable per OSHA definitions.
Extinguishing media	
Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous combustion products	Decomposition products may include the following materials: halogenated compounds, metal oxide/oxides, carbon monoxide, carbon dioxide, chlorine gas, hydrochloric acid vapor, fluorine compounds (HF and fluorine), irritating and toxic fumes and gasses .
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Do not reuse spilled material. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small spill	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Do not reuse spilled material.

7. Handling and storage

Handling	<p>Material should be free-flowing. Do not use damp or clumpy material. Addition of damp or clumpy material to molten metal may present an explosion hazard.</p> <p>Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.</p>
Storage	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Product may absorb moisture from the air. Immediately dispose of any material that is damp or clumpy. Use appropriate containment to avoid environmental contamination.</p>

8. Exposure controls/personal protection

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Calcium Carbonate (CaCO ₃)	<p>OSHA PEL 8-hr TWA 15 mg/m³ (total dust)</p> <p>OSHA PEL 8-hr TWA 5 mg/m³ (respirable fraction)</p>
Chlorine	<p>ACGIH TLV 8-hr TWA 1.5 mg/m³ 0.5 ppm</p> <p>ACGIH TLV STEL (15 min) 2.9 mg/m³ 1 ppm</p> <p>OSHA PEL Ceiling 3 mg/m³ 1 ppm</p>

Hydrofluoric Acid

ACGIH TLV 8-hr TWA

0.5 ppm

ACGIH TLV Ceiling

2 ppm

OSHA PEL 8-hr TWA

2.5 mg/m³

OSHA PEL Z2 8-hr TWA

3 ppm

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory

Follow all facility requirements when working near molten metal. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. When this material is added to molten metal in normal use, the following hazardous vapors may be generated: chlorine gas, hydrochloric acid vapor, HF and fluorine gas

Hands

Follow all facility requirements when working near molten metal. Neoprene, nitrile, or natural rubber gloves are appropriate when handling material away from metal pouring or mixing area.

Eyes

Follow all facility requirements when working near molten metal. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin

Follow all facility requirements when working near molten metal. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Form Crystalline solid.
Color White
Odor none.
Density 2.0 g/cm³ Approx.

10. Stability and reactivity

Stability The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid Product may absorb moisture from the air. Damp material may present an explosion hazard when added to molten metal.

Materials to avoid Reactive or incompatible with the following materials: strong oxidizing agents, alkalis, iron,

Hazardous decomposition products Decomposition products may include the following materials: carbon monoxide, carbon dioxide, chlorine gas, hydrochloric acid vapor, fluorine compounds (HF and fluorine), and other toxic or irritating vapors and gases.

11. Toxicological information

Acute toxicity

Ingredient name

Potassium Chloride	LD50 Oral	Rat	2,600 mg/kg
Calcium Carbonate (CaCO ₃)	LD50 Oral	Rat	6,450 mg/kg
Silicate(2-), hexafluoro-, potassium (1:2)	LD50 Oral	Rat	156 mg/kg

Other Toxicological Information

Carcinogenicity

Classification

Ingredient name

Potassium Chloride	ACGIH	Not classified
	IARC	Not classified
	NTP	Not listed
	OSHA	Not regulated
	EU	Not classified
Calcium Carbonate (CaCO ₃)	ACGIH	Not classified
	IARC	Not classified
	NTP	Not listed
	OSHA	Not regulated
	EU	Not classified
Silicate(2-), hexafluoro-, potassium (1:2)	ACGIH	Not classified
	IARC	Not classified

NTP	Not listed
OSHA	Not regulated
EU	Not classified

12. Ecological information

Environmental effects

No known significant effects or critical hazards.

Aquatic ecotoxicity

Ingredient name

Potassium Chloride

Fresh water	Acute LC50 951 mg/l/96 h	Bluegill
Fresh water	Acute LC50 880 mg/l/96 h	Fathead minnow

Other adverse effects

No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International transport regulations

Regulatory information	UN/NA number	Proper shipping name	Classes/*PG	Reportable Quantity (RQ)
CFR		Non-regulated		
TDG		Non-regulated		
IMO/IMDG		Non-regulated		
IATA (Cargo)		Non-regulated		

*PG : Packing group

15. Regulatory information

US regulations

HCS Classification Toxic material, Target organ effects

U.S. Federal regulations

SARA 311/312 Classification Immediate (acute) health hazard, Delayed (chronic) health hazard

SARA 313 - Supplier Notification

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.
None required.

SARA 302 Extremely Hazardous Substances None required.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants None required.

State regulations **Massachusetts RTK Substances** None required.

New Jersey RTK Hazardous Substances The following components are listed:
Silicate(2-), hexafluoro-, potassium (1:2), Potassium Sulfate (K₂(SO₄)),

Pennsylvania RTK Hazardous Substances None required.

California Prop. 65: None required.

Canada
WHMIS (Canada)

Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists **Canadian NPRI:** The following components are listed: Calcium Carbonate (CaCO₃),

International regulations
Chemical inventories

Australia inventory (AICS) All components are listed or exempted.
Canada inventory All components are listed or exempted.
Europe inventory All components are listed or exempted.
Japan inventory All components are listed or exempted.
China inventory (IECSC) All components are listed or exempted.
Korea inventory All components are listed or exempted.
New Zealand Inventory (NZIoC) Not determined.
Philippines inventory (PICCS) All components are listed or exempted.
United States inventory (TSCA 8b) All components are listed or exempted.

16. Other information

Hazardous Material Information System III (U.S.A.) Health : 2
Flammability: 0
Physical hazards : 0
Chronic : *

Caution: HMIS[®] ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS[®] ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS[®] ratings are to be used with a fully implemented HMIS[®] program. HMIS[®] is a registered mark of the National Paint & Coatings Association (NPCA). HMIS[®] materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

Prepared by Product Safety & Compliance Group, (630)575-5722, or (630)575-5705
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