

# Material Safety Data Sheet

FOR INDUSTRIAL USE ONLY

WF 16 MNL

## 1. Product and company identification

<b>Product name</b>	WF 16 MNL
<b>MSDS Number</b>	300000016125
<b>Product Type</b>	Manual Flux
<b>Product use</b>	Drossing Flux
<b>Manufacturer, Importer, Supplier</b>	HA International, LLC 630 Oakmont Lane Westmont, IL 60559
<b>Print date</b>	19-AUG-2010
<b>Telephone</b>	<b>For Emergency Medical Assistance</b> Call Health & Safety Information Services, 1-866-303-6949  <b>For Emergency Transportation Information</b> 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

<b>Form</b>	Crystalline solid.
<b>Odor</b>	none.
<b>OSHA/HCS status</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Emergency overview</b>	<b>WARNING !</b> DAMP MATERIAL MAY PRESENT AN EXPLOSION HAZARD WHEN ADDED TO MOLTEN METAL. NEVER ADD DAMP MATERIAL TO MOLTEN METAL. TOXIC IF SWALLOWED. HARMFUL IN CONTACT WITH SKIN. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
<b>Potential acute health effects</b>	
<b>Inhalation</b>	Can cause central nervous system (CNS) depression. Irritating to respiratory system.
<b>Ingestion</b>	Toxic if swallowed. Can cause central nervous system (CNS) depression. Can cause methemoglobin formation.
<b>Skin</b>	Harmful in contact with skin. Irritating to skin.

**Eyes** Irritating to eyes.

**Potential chronic health effects**

**Chronic effects** Contains material that can cause target organ damage. Can cause abnormal hardening of bone.

**Carcinogenicity** Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

**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: bones  
Review Section 2 and 11 for any additional assessments.

**Over-exposure signs/symptoms**

**Inhalation** Adverse symptoms may include the following: nausea or vomiting, respiratory tract irritation, coughing, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness,

**Ingestion** Adverse symptoms may include the following: nausea or vomiting, dizziness/vertigo, dyspnea (labored breathing), drowsiness/fatigue, headache, irritability, fainting, stupor, coma unconsciousness, anemia, cyanosis,

**Skin** Adverse symptoms may include the following: irritation, redness,

**Eyes** Adverse symptoms may include the following: pain or 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**

<b><u>Ingredient name</u></b>	<b><u>CAS number</u></b>	<b><u>WT %</u></b>
Potassium Chloride	7447-40-7	10.0 - 30.0
Sodium Hexafluorosilicate	16893-85-9	10.0 - 30.0
Sodium Nitrate	7631-99-4	5.0 - 10.0
Sodium Carbonate (Na <sub>2</sub> CO <sub>3</sub> )	497-19-8	1.0 - 5.0

*\*\* 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.

**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.

<b>Inhalation</b>	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.
<b>Ingestion</b>	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.
<b>Protection of first aid personnel</b>	No action shall be taken involving any personal risk or without suitable training. 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. If it is suspected that dust, vapor, mist or gas are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.
<b>Notes to physician</b>	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

<b>Flammability of the product</b>	This product is not flammable per OSHA definitions.
<b><u>Extinguishing media</u></b>	
<b>Suitable</b>	Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	None known.
<b>Special exposure hazards</b>	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.
<b>Hazardous combustion products</b>	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 .
<b>Special protective equipment for fire-fighters</b>	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

<b>Personal precautions</b>	No action shall be taken involving any personal risk or without suitable
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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). Do not breathe dust, vapor, mist or gas.

**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**

Material should be free-flowing. Do not use damp or clumpy material. Addition of damp or clumpy material to molten metal may present and explosion hazard.

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. Do not breathe dust, vapor, mist or gas.

**Storage**

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. Use appropriate containment to avoid environmental contamination. Product may absorb moisture from the air. Immediately dispose of any material that is damp or clumpy.

## 8. Exposure controls/personal protection

**Ingredient name**

Sodium Hexafluorosilicate

**Occupational exposure limits**

**ACGIH TLV 8-hr TWA**

2.5 mg/m<sup>3</sup>

**OSHA PEL 8-hr TWA**

2.5 mg/m<sup>3</sup>

**OSHA PEL Z2 8-hr TWA**  
2.5 mg/m<sup>3</sup>  
(dust)

Chlorine

**ACGIH TLV 8-hr TWA**  
1.5 mg/m<sup>3</sup> 0.5 ppm

**ACGIH TLV STEL (15 min)**  
2.9 mg/m<sup>3</sup> 1 ppm

**OSHA PEL Ceiling**  
3 mg/m<sup>3</sup> 1 ppm

Hydrofluoric Acid

**ACGIH TLV 8-hr TWA**  
0.5 ppm

**ACGIH TLV Ceiling**  
2 ppm

**OSHA PEL 8-hr TWA**  
2.5 mg/m<sup>3</sup>

**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. 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.

<b>Eyes</b>	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.
<b>Skin</b>	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.
<b>Environmental exposure controls</b>	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

<b>Form</b>	Crystalline solid.
<b>Color</b>	White
<b>Odor</b>	none.
<b>Solubility</b>	Soluble
<b>Density</b>	2.7 g/cm <sup>3</sup> Approx.

## 10. Stability and reactivity

<b>Stability</b>	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	Product may absorb moisture from the air. Damp material may present an explosion hazard when added to molten metal.
<b>Materials to avoid</b>	Reactive or incompatible with the following materials: strong oxidizing agents, alkalis, iron,
<b>Hazardous decomposition products</b>	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
Sodium Hexafluorosilicate	LD50 Oral	Rat	125 mg/kg
Sodium Nitrate	LD50 Oral	Rat	1,267 mg/kg
	LD50 Oral	Rabbit	2,680 mg/kg
	LD50 Oral	Mouse	3,500 mg/kg
Sodium Carbonate (Na <sub>2</sub> CO <sub>3</sub> )	LD50 Oral	Rat	4,090 mg/kg
	LD50 Oral	Mouse	6,600 mg/kg
	LC50 Inhalation	Rat	2.3 mg/l/2 h

LC50 Inhalation	Mouse	1.2 mg/l/2 h
LC50 Inhalation	Guinea pig	0.8 mg/l/2 h

**Other Toxicological Information**

**Carcinogenicity**

**Classification**

**Ingredient name**

Potassium Chloride

ACGIH	Not classified
IARC	Not classified
NTP	Not listed
OSHA	Not regulated
EU	Not classified

Sodium Hexafluorosilicate

ACGIH	Not classifiable as to its carcinogenicity to humans.
IARC	IARC Group 3, not classifiable as to carcinogenicity to humans
NTP	Not listed
OSHA	Not regulated
EU	Not classified

Sodium Nitrate

ACGIH	Not classified
IARC	The agent (mixture) is probably carcinogenic to humans. (Group 2A)
NTP	Not listed
OSHA	Not regulated
EU	Not classified

Sodium Carbonate (Na2CO3)

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

Sodium Hexafluorosilicate

Fresh water	Acute LC50 49 mg/l/4 d	Bluegill
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Sodium Nitrate

Fresh water	Acute LC50 2,000 mg/l/96 h	Bluegill
Fresh water	Acute LC50 1,355 mg/l/96 h	Rainbow trout, donaldson trout
Salt water	Acute LC50 1,050 mg/l/96 h	Rainbow trout, donaldson trout

Sodium Carbonate (Na2CO3)

Fresh water	Acute LC50 < 850 mg/l/96 h	Fathead minnow
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**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, Irritating material, Carcinogen, 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.

Sodium Nitrate - 7631-99-4 ( 5.00%),

**SARA 302 Extremely Hazardous Substances** None required.

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

**State regulations** **Massachusetts RTK Substances** The following components are listed: Sodium Chloride, Sodium Hexafluorosilicate, Sodium Nitrate,

**New Jersey RTK Hazardous Substances** The following components are listed: Sodium Nitrate, Sodium Hexafluorosilicate,

**Pennsylvania RTK Hazardous Substances** The following components are listed: Sodium Nitrate, Sodium Chloride,

**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).  
 Class E: Corrosive material

**Canadian lists**

**Canadian NPRI:** The following components are listed: Sodium Nitrate,

**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.

<b>16. Other information</b>
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**Hazardous Material  
 Information System III  
 (U.S.A.)**

Health : 2  
 Flammability: 0  
 Physical hazards : 0  
 Chronic : \*

Caution: HMIS<sup>®</sup> 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<sup>®</sup> ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS<sup>®</sup> ratings are to be used with a fully implemented HMIS<sup>®</sup> program. HMIS<sup>®</sup> is a registered mark of the National Paint & Coatings Association (NPCA). HMIS<sup>®</sup> 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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