

# AWSM Industries, LLC

## MATERIAL SAFETY DATA SHEET

### Fluotitanic Acid

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#### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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**PRODUCT NAME(S):** Fluotitanic Acid, 50%  
Fluotitanic Acid, 60%

**OTHER/GENERIC NAMES:** Fluorotitanic Acid  
Hydrofluorotitanic Acid  
Hexafluorotitanic Acid  
Hexafluorotitanium Acid

**PRODUCT USE:** Industrial

**DISTRIBUTOR:** AWSM Industries, LLC  
12 Route 17 North, Suite 309  
Paramus, NJ 07652

**TELEPHONE:** (201) 845-4666  
(Monday-Friday, 8:30 AM – 5:00 PM)

**CHEMTREC PHONE:** 1800-424-9300  
(24 Hours/Day, 7 Days/Week)

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#### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

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<u>INGREDIENT NAME:</u>	<u>CAS NO.</u>	<u>% WT</u>
Fluotitanic Acid	17439-11-1	45-65
Water	7732-18-5	35-55
Hydrofluoric Acid	7664-39-3	0-2

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-to-Know" compliance and for other reasons.

**OSHA Hazard Communication Standard:** *This product is considered hazardous under the OSHA Hazard Communication Standard*

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#### SECTION 3: HAZARDS IDENTIFICATION

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**EMERGENCY OVERVIEW:** A colorless corrosive, toxic liquid. Both liquid and vapor can cause severe burns to all parts of the body. Toxic if inhaled, swallowed or by skin contact. Specialized medical treatment is required for all exposures.

#### POTENTIAL HEALTH HAZARDS

**EYES:** Liquid and vapor can cause irritation or corneal burns. May cause permanent eye injury.

**SKIN:** Liquid and vapor can cause severe burns that may not be immediately painful or visible. Hydrofluoric Acid (HF) will penetrate the skin and attack underlying tissues and bone. Large burns (totaling over 25 square inches of body surface area) may also cause hypocalcemia (depletion of calcium in the body) and other toxic effects which may be fatal.

**INGESTION:** Can cause nausea, vomiting, abdominal cramps, and diarrhea. Large doses can cause burns to the mouth, throat and stomach, and central nervous system effects, including seizures, coma and death. Even with small amounts of dilute solutions, profound and

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**INHALATION:** possibly fatal hypocalcemia (depletion of calcium in the body) and systematic toxicity is likely to occur unless medical treatment is promptly initiated. Can irritate the nose, throat and respiratory system. Onset of symptoms may be delayed for hours. Exposure can cause coughing and shortness of breath. Severe exposure can cause buildup of fluid in lungs and severe shortness of breath. Can also cause other toxic effects including hypocalcemia (depletion of calcium in the body) which if not properly treated can result in death.

**DELAYED EFFECTS:** Both liquid and vapor can cause delayed burns. Severe or repeated exposure can cause a build-up of fluoride in the bones and teeth, a condition called fluorosis. This may cause pain, disability and mottling of the teeth.

**Ingredients found on one of the three OSHA designated carcinogen lists are listed below.**

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.			

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#### **SECTION 4: FIRST AID MEASURES**

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**SKIN:** Remove victim from the contaminated area and immediately wash the burned area with plenty of water for a minimum of 15 minutes. Limit washing to 5 minutes if definitive medical treatment is available. Remove all contaminated clothing while washing continuously. After thorough washing for at least 5 minutes, the burned area should be immersed in a solution of 0.13 % iced aqueous Zephiran<sup>®</sup> Chloride until pain is relieved. As an alternate first aid treatment, 2.5 % calcium gluconate gel may be continuously massaged into the burn area until the pain is relieved. For larger burns or burns treated with calcium gluconate gel (in which pain is present for more than 30 minutes), a physician should inject 5% aqueous calcium gluconate beneath, around and in the burned area. Use of local anesthetics is not recommended, as reduction in pain is an indicator of effectiveness of treatment.

**EYES:** Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation. Get immediate competent medical attention, preferably an eye specialist. If a physician is not immediately available, apply one or two drops of 0.5 % Pontocaine<sup>®</sup> Hydrochloride solution followed by a second irrigation for 15 minutes. Do not use the solution described for skin care treatment. Use no oils or greases unless instructed to do so by a physician. Irrigate with 1 % calcium gluconate in normal saline for 1 to 2 hours to prevent or lessen corneal damage.

**INHALATION:** Remove victim to fresh air. Get immediate medical attention. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen, provided a qualified operator is available. Do not give stimulant unless instructed to do so by a physician. Victim should be examined by a physician and held under observation for at least 24 hours. Calcium gluconate, 2.5 %, may be given by nebulizer with oxygen.

**INGESTION:** If person is conscious, rinse mouth with water. Give large amounts of water to dilute stomach contents. Several glasses of milk or several ounces of milk of magnesia may be given for their soothing effect. Do not induce vomiting. Get immediate medical attention.

**ADVICE TO PHYSICIAN:** For burns of large skin areas (greater than 25 square inches), for ingestion and for significant inhalation exposure, severe systemic effects may occur. Monitor and correct for hypocalcemia, cardiac arrhythmias, hypomagnesemia and hyperkalemia. In some cases renal dialysis may be indicated. For certain burns, especially of the digits, use of intra-arterial calcium gluconate may be indicated. For inhalation exposures, treat as chemical pneumonia. Monitor for

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hypocalcemia. 2.5 % calcium gluconate in normal saline nebulizer or by IPPB with 100% oxygen may decrease pulmonary damage bronchodilators may also be administered.

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#### SECTION 5: FIRE-FIGHTING MEASURES

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##### **FLAMMABLE PROPERTIES**

<b>FLASH POINT:</b>	Not applicable
<b>FLASH POINT METHOD:</b>	Not applicable
<b>AUTOIGNITION TEMPERATURE:</b>	Not applicable
<b>UPPER FLAME LIMIT (volume % in air)</b>	Not applicable
<b>LOWER FLAME LIMIT (volume % in air)</b>	Not applicable
<b>FLAME PROPAGATION RATE (solids)</b>	Not applicable
<b>OSHA FLAMMABILITY CLASS:</b>	Not flammable

##### **EXTINGUISHING MEDIA:**

Water spray, foam, carbon dioxide, or dry chemical.

##### **UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Emits toxic and corrosive fumes under fire conditions.

##### **SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:**

Use self-contained breathing apparatus and full protective clothing.

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#### SECTION 6: ACCIDENTAL RELEASE MEASURES

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##### **IN CASE OF SPILL OR OTHER RELEASE:** (Always wear recommended personal protective equipment.)

Provide ventilation to spill area. Those treating spills or repairing leaks must use full protective equipment. Fully protected personnel should cautiously dilute small spills or leaks with plenty of water. Carefully neutralize the dilute liquid with caustic soda, lime or other alkaline material. Absorb with inert absorbent and place in an approved, labeled, chemical waste container. Do not allow to enter into sewers or waterways.

Spills and releases may have to be reported to Federal and/or local authorities. See section 15 regarding reporting requirements.

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#### SECTION 7: HANDLING AND STORAGE

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##### **NORMAL HANDLING:** (Always wear recommended personal protective equipment.)

Do not breathe vapor or mist. Use with adequate ventilation. Avoid all contact with skin, eyes and clothing. Wash hands before breaks and after work. Do not eat or drink in the work area.

##### **STORAGE RECOMMENDATIONS:**

Store in approved containers in a cool, dry, well ventilated area. Keep containers upright and tightly closed. Protect containers from physical damage.

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#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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##### ENGINEERING CONTROLS:

Ensure adequate ventilation. Use local ventilation at product handling or transfer points.

##### PERSONAL PROTECTIVE EQUIPMENT

**SKIN PROTECTION:** For routine product use, wear acid-resistant jacket, trousers, and gauntlet gloves. For increased protection, use air-supplied totally encapsulating chemical protective suit.

**EYE PROTECTION:** As a minimum, wear chemical safety goggles and full-face plastic shield. For increased protection, use air-supplied acid hood.

**RESPIRATORY PROTECTION** Not required for properly ventilated areas. If there is potential for inhalation of vapor or mist, use an appropriate NIOSH approved respirator. The respirator must be selected based on contamination levels and use conditions found in the workplace, must not exceed the working limits of the respirator and be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration. (OSHA) 29 CFR 1910.134

**ADDITIONAL RECOMMENDATIONS** Safety showers and eyewash in close proximity to working area.

##### EXPOSURE GUIDELINES:

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Fluorides (as F)	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA	None
Hydrofluoric Acid	3 ppm- ceiling	3 ppm TWA 6 ppm (15 Min.) STEL	10 mg (F)/gm creatine post-shift***

<sup>1</sup> = Limit established by AWSM Industries.

<sup>2</sup> = Workplace Environmental Exposure Level (AIHA).

<sup>3</sup> = Biological Exposure Index (ACGIH).

##### OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

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#### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE:** Colorless

**PHYSICAL STATE:** Liquid

**MOLECULAR WEIGHT:** 163.87

**CHEMICAL FORMULA:** H<sub>2</sub>TiF<sub>6</sub>

**ODOR:** Slight odor

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):**  
50%: Density = 1.50 – 1.55 gm/cm<sup>3</sup> @ 68°F (20°C)  
60%: Density = 1.65 – 1.70 gm/cm<sup>3</sup> @ 68°F (20°C)

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<b>SOLUBILITY IN WATER (weight %):</b>	Miscible
<b>pH:</b>	Acidic
<b>BOILING POINT:</b>	>212°F (100°C) @ 1013 hPa.
<b>MELTING POINT:</b>	Not determined.
<b>VAPOR PRESSURE:</b>	Not determined.
<b>VAPOR DENSITY (air= 1.0):</b>	Not determined.
<b>EVAPORATION RATE:</b>	Not determined. <b>COMPARED TO:</b> Not Applicable
<b>% VOLATILES:</b>	Not determined.
<b>FLASH POINT:</b>	Not flammable.

(Flash point method and additional flammability data are found in Section 5.)

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#### SECTION 10: STABILITY AND REACTIVITY

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**NORMALLY STABLE/ (CONDITIONS TO AVOID):**

Stable under normal conditions.

**INCOMPATIBILITIES:**

Material attacks glass and silicate containing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Thermal decomposition may generate hydrogen fluoride.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

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#### SECTION 11: TOXICOLOGICAL INFORMATION

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**IMMEDIATE (ACUTE) EFFECTS:**

Data not available for Fluotitanic Acid.

**Hydrogen Fluoride:**

Inhalation (rat) LC50: 5,100 ppm/ 5 min.

Inhalation (rat) LC50: 1,300 ppm/ 60 min.

Skin: 2% solution of HF was corrosive to rabbit skin with 1 hour exposure, but not with 1 minute exposure. 0.5 % Solution of HF was corrosive to rabbit skin with 5 minute exposure.

**DELAYED (SUBCHRONIC AND CHRONIC EFFECTS)**

**Hydrogen Fluoride:**

Prolonged exposure can cause bone and joint changes in humans. Subchronic inhalation exposure to 10 ppm hydrogen fluoride (6 hr/day for 91 days) in rats caused non-specific progressive toxicity, characterized by general malaise, depressed diet and food consumption and loss of weight. Progressive emaciation was more severe in the males and severe enough to cause death in a few animals. No biologically significant changes were produced at 1.0 and 0.1 ppm.

**OTHER DATA:**

None.

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#### SECTION 12: ECOLOGICAL INFORMATION

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Aquatic Toxicity (HF): 60 ppm\*/fish/lethal/fresh water. (\*time period not specified)

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#### **SECTION 13: DISPOSAL CONSIDERATIONS**

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##### **RCRA**

Is the unused product a RCRA hazardous waste if discarded? Yes

If yes, the RCRA ID number is: D002 Corrosive

##### **OTHER DISPOSAL CONSIDERATIONS:**

Whatever cannot be saved for recovery for recycling should be managed in an appropriate and approved waste disposal facility. Treat small amounts of product by cautiously adding an excess of water and neutralize with lime slurry, limestone, soda ash or other alkali. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with local, state, and federal requirements.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

#### **SECTION 14: TRANSPORT INFORMATION**

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**US DOT HAZARD CLASS:** 8, PG II  
**US DOT ID NUMBER:** UN3264  
**PROPER SHIPPING NAME:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (Fluotitanic Acid)

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

#### **SECTION 15: REGULATORY INFORMATION**

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##### **TOXIC SUBSTANCES CONTROL ACT (TSCA)**

**TSCA INVENTORY STATUS:** Material is on the TSCA Inventory

**OTHER TSCA ISSUES:** None

##### **SARA TITLE III/ CERCLA**

"Reportable/ Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<b><u>INGREDIENT NAME</u></b>	<b><u>SARA/CERCLA RQ (LB)</u></b>	<b><u>SARA EHS TPQ(LB)</u></b>
Hydrofluoric Acid	100 as 100% HF	100 as 100% HF

**Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800) 424-8802 and to your Local Emergency Planning Committee.**

**SECTION 311 HAZARD CLASS:** Immediate Delayed.

##### **SARA 313 TOXIC CHEMICALS:**

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

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**INGREDIENT NAME**

Hydrogen Fluoride

**COMMENT**

De Minimis concentration is 1.0 %

**STATE RIGHT-TO-KNOW**

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

**INGREDIENT NAME**

No ingredients listed in this section.

**WEIGHT%****COMMENT****ADDITIONAL REGULATORY INFORMATION:**

Hydrogen fluoride is on the Commerce Control List: Export Control Classification Number (ECCN) 1C350, Chemicals, that may be used as Precursors for Toxic Chemical Agents (15 CFR 774, Supp. No.1)

**WHMIS CLASSIFICATION (CANADA):**

Not determined.

**FOREIGN INVENTORY STATUS:**

Fluotitanic Acid is on the following inventories.

EINECS

Canadian DSL.

Australian.

Korean.

Japanese (ENCS).

China (Inventory of Existing Chemical Substances).

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**SECTION 16: OTHER INFORMATION**

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**CURRENT ISSUE DATE:** January 2006**PREVIOUS ISSUE DATE:** January 2005**CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:**

New Format

**OTHER INFORMATION:**

All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness or a particular purpose or any other matter, including, including, without limitation, that the practice of application of any such information is free of patent infringement or other intellectual property misappropriation. AWSM Industries, LLC is not engaged in the business of providing technical, operational, engineering or safety information for a fee, and therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. AWSM Industries, LLC shall not be responsible or liable for the use, application or implementation of the information, provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors, and agents.

Date Created	Created By	Replaces	Area	Product/ Process	Special
01/18/2006	JD	01/01/05	MSDS	Fluotitanic Acid	JL