



MATERIAL SAFETY DATA SHEET
MPD-1003

Section: 1 IDENTIFICATION

Product Name:	High Performance Metal Cleaner
Chemical Family:	Metal Cleaner/Orange in Color
Manufacturer:	Real Clean Aviation Products 43W730 US Highway 30 Sugar Grove, IL. 60554
Blender:	Real Clean Aviation Products
For Additional Product Information:	(800)323-5966
In Emergency:	Poison Control

Section: 2 HAZARD(s) IDENTIFICATION

Physical state:	Liquid
Emergency overview:	Material is moderately toxic, May be harmful in inhaled or absorbed through the skin. Repeated or prolonged exposure to the substance may cause severe irritation and may be toxic.
Routes of entry:	Dermal contact, Eye contact. Inhalation
SAFE-T-DATA:	
Health Rating:	4 - Extreme (Poison)
Flammability Rating:	0 - None
Reactivity Rating:	2 - Moderate
Contact Rating:	4 - Extreme (Corrosive)
Lab Protective Equipment:	GOGGLES & SHIELD, LAB COAT & APRON, VENT HOOD, PROPER GLOVES
Storage Color Code:	White (Corrosive)
Potential Health Hazards:	
Inhalation:	Mild exposure: Can irritate nose, throat and respiratory system. Severe exposure can cause nose and throat burns, lung inflammation and pulmonary edema. Also depletes calcium levels in the body if not promptly treated, resulting in death due to hypocalcaemia.
Ingestion:	Can cause severe mouth, throat and stomach burns. Can affect kidney function and be fatal if swallowed. Profound and possibly fatal hypocalcaemia is likely to occur unless medical treatment is promptly initiated.
Skin :	Both liquid and vapor can cause severe burns which may not be immediately painful or visible. Substance will penetrate skin and attack underlying tissues and bones. Large burns (over 25 square inches) may also cause hypocalcaemia which, in rare instances, has been fatal. Special medical treatment is required to treat acid burns. The effects may be delayed if initial first aid measures are inadequate. Diluted solutions of 2% or lower can also cause burns.

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Eyes:	Both liquid and vapor forms can cause irritation or corneal burns or conjunctivitis. Diluted solutions (2% or less) can also cause burns.
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Section: 3 COMPOSITION/INFORMATION ON INGREDIENTS

POISON: DANGER: CORROSIVE. Hazardous liquid and vapor. Immediately dangerous to life or health. Causes severe burns which may not be immediately painful or visible. May be fatal if swallowed or inhaled. Liquid and vapor can burn skin, eyes, and respiratory tract. Causes bone damage, reaction with certain metals generates flammable and potentially explosive hydrogen gas.	
Name:	Aqueous Hydrogen Fluoride
CAS number:	7664-39-3
Hazard Type per CFR 1910.1200:	Corrosive
Exposure Limits:	TWA (Time Weighted Average): 2 mg/m ²
Skin:	2 ppm
IDLH (immediately dangerous to life or Health):	30 ppm
OSHA PEL (Permissible Exposure Limit):	3 ppm 8 TWA
STEL (Short Term Exposure Limit):	6 ppm
LC₅₀ (inhl-human):	50 ppm/30 min
LC₅₀ (inhl-rat):	1278 ppm/1 hr
NTP,IARC or OSHA Carcinogen:	None

Section: 4 FIRST AID MEASURES

EYES:	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.
SKIN:	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention. Wash contaminated clothing before reusing. In the case of serious skin contact, wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream (Calcium gluconate gel). Seek medical attention.
INGESTION:	Do not induce vomiting. Loosen light clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Treat with milk of magnesia, and/or Calcium Chloride (10% solution). Seek immediate medical attention.
INHALATION:	Remove from exposure and restore breathing. Keep person calm, If not breathing, give artificial respiration and call emergency response. If breathing is difficult, give oxygen and call emergency response.

Section: 5 FIRE-FIGHTING MEASURES

FLAMMABILITY PROPERTIES:	
Flash Point:	Not Flammable
Flash Point Method:	Not applicable
Auto-ignition Temperature:	Not applicable
Upper Flame Limit (volume % in air)	Not applicable
Lower Flame limit (volume % in air)	Not applicable
Flame Propagation Rate (solids):	Not applicable
OSHA Flammability Class:	Not applicable
Extinguishing Media:	Use water or suitable agent for fires adjacent to non-leaking tanks or containers of Hydrogen Fluoride (HF). Do not use solid water streams near ruptured tanks or spills of HF. Acid reacts violently with water and can splatter acid onto personnel.
Unusual Fire and Explosion Hazards:	Reaction with certain metals generates flammable and potentially explosive hydrogen gas. Considerable heat is evolved when contacted with many substances. Heat increases pressure and may explode container. Will react violently with water.
Special Fire Fighting Precautions/Instructions	Wear NIOSH-approved, self-contained breathing apparatus and full protective clothing. Use water spray to keep non-leaking, fire-exposed containers cool.

Section: 6 ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS CALL CHEMTREC AT 1-800-424-8802	
(RQ) Reportable Quantity:	CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) RQ = 100 lbs
Spill Mitigation Procedures:	Stop source of spill as soon as possible and notify appropriate personnel. Berm around spill area to prevent spill from spreading. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary; Neutralize the residue with a diluted solution of sodium carbonate. Ventilate area.
Air Release:	Vapors may be suppressed by use of water fog or spray. Increase ventilation to keep exposure levels within acceptable range.
Water Release:	Contain liquid for treatment. Neutralize the residue with a dilute solution of sodium carbonate.
Land Spill:	Create a trench to contain materials. Spilled materials may be contained using sand, clay, earth or a commercial absorbent. Do not place materials back in the original containers.



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Spill Residues:	Dispose of per guidelines under section 13 (DISPOSAL CONSIDERATIONS).
Personnel Protection for Emergency Spill and Fire Fighting Situations:	Additional protective clothing may be worn to prevent personnel contact with this material. Those items include but are not limited to gloves, apron, and safety glasses.

Section: 7 HANDLING and STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES. WASH OFF WITH WATER.	
Normal Handling	Do not breathe vapor or mist. Use only with adequate ventilation. Avoid all contact with skin, eyes and clothing, even with diluted solutions. Employees handling these materials should be thoroughly trained in safety procedures.
Storage Conditions:	Store in a cool, dry, well-ventilated place. Store at temperatures below 120 ⁰ F. Do Not store or use near heat, sparks, or flames. Avoid breathing vapors. Vapors are heavier than air and will collect in low areas and other confined areas.

Section: 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Hydrogen Fluoride Airborne Exposure Limits:	OSHA Permissible Exposure Limit (PEL), 3 ppm (TWA) as F. ACGIH Threshold Limit Value (TVL), 0.5 ppm (TWA) as F, d 2ppm (STEL) Ceiling as F.
Ventilation System	A system of the contaminant at its source, preventing dispersion of it into the general work area. Refer to the ACGIH document, <i>Industrial Ventilation, A Manual of Recommended Practices</i> , most recent edition of, for details. tem of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emission
Personal Respirators (NIOSH Approved):	If the exposure limit is exceeded, a full face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supported respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. Since the IDLH is low (3- ppm), the above



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	cartridge system is not specifically approved for HF. (3M Respirator Selection Guide).
Skin Protection:	Wear protective clothing, including boots or safety shoes with polyvinyl chloride (PVC) or neoprene. Use chemical goggles and/or a full face shield. Wear coveralls with long sleeves, gauntlets and gloves of PVC or neoprene. A high degree of protection is obtained with an air-inflated suit with mask and safety belt. Use protection suitable for conditions.
Eye Protection:	Use chemical safety goggles and/or full face shield where splashing is possible. Maintain eye wash fountain and quick drench facilities in work area.

Section: 9 PHYSICAL and CHEMICAL PROPERTIES

Physical State (gas, liquid, solid):	Liquid
Appearance:	Orange
Odor:	Slight odor
Freezing Point	Not Determined
Boiling Range:	> 212 °F
Decomposition Temperature	Not Determined
Specific Gravity (H ₂ O = 1):	1.0
Bulk Density:	8.3 lbs/gal @70 °F
pH @ 25 Deg C:	Acidic
Vapor Pressure @ 25 Deg C:	17.5 mm of Hg (@20°C Water)
Solubility in Water:	Soluble
Evaporation Rate:	Slower than Ether
Vapor Density:	0.62 (Air = 1) (Water)
Volatile Organic Compound (VOC) G/L:	0 grams/Liter

Section: 10 STABILITY and REACTIVITY

Conditions Under Which This Product May be Unstable:	
Temperature:	Above 120 °F
Mechanical Shock or Impact:	None
Electrical (Static) Discharge:	None
Hazardous Polymerization:	Will Not Occur
Incompatible Materials:	Slightly reactive to react with metals, alkalis
Conditions of Reactivity:	None Known
Hazardous Decomposition Products:	Carbon dioxide, Carbon Monoxide

Section: 11 TOXICOLOGICAL INFORMATION

Immediate (Acute) Effects:	
LC _{LO} (inhl-humans):	50 ppm/30 min
LC ₅₀ (inhl-rat):	1278 ppm/1 hr
LC ₅₀ (inhl-mouse):	342 ppm/1 hr
Delayed (Sub chronic and Chronic Effects):	Effects of chronic exposure include systemic fluoride toxicity, osteosclerosis, and mottling of the teeth. Hypocalcemia, metabolic acidosis, pulmonary edema and death can occur from high-level chronic exposure.

Section: 12 ECOLOGICAL INFORMATION

Environmental Fate:	If the pH is > 6.5, soil can bind fluorides tightly. High calcium content will immobilize fluorides, which can be damaging to plants when present in acid soils.
Environmental Toxicity:	This material is expected to be slightly toxic to aquatic life.

Section: 13 DISPOSAL CONSIDERATIONS

<p>Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposal in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulation. Dispose of container and unused contents in accordance with federal, state and local requirements.</p>
<p>Spilled material collected in absorbent material should be transferred to steel disposal or recovery drums.</p>
<p>If this product becomes a waste, it should be disposed of in accordance with local, state, and federal regulations.</p>

Section: 14 TRANSPORT INFORMATION

DOT Shipping Name:	Solution (Hydrogen Fluoride)
DOT Hazard Class:	8
DOT Packing Group:	II (Product is < 60% HF)
UN Number:	UN1790
DOT Reportable Quantity:	None



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Section:15 REGULATORY INFORMATION

INTERNATIONAL	
All components of this product are listed on the following inventories:	MITI (Japan), EINECS (EEC), DSL (Canada)
FEDERAL	
	Components of this product are listed on the TSCA inventory
Superfund Amendments and Reauthorization Act Title III (SARA):	
Section 302/304:	Requires emergency planning based on Threshold Planning Quantities ((TPQs) and release reporting based on Reportable Quantities (RQs) of 'Extremely Hazardous Substances' (EHS) listed in Appendix A of 40 CFR 355.
Section 311 and 312:	This material and /or its components are classified as a health and/or physical hazard.
Section 313:	This material contains chemicals with known CAS numbers subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	This material contains chemical(s) with known CAS numbers classified as hazardous substances subject to the reporting requirements of CERCLA (40 CFR 302) and to the release reporting requirements of SARA (Section 302) based on reportable quantities (RQs).
OSHA Regulations	'Chemical-specific' U.S. Occupational Safety and Health Administration (OSHA) regulations (1910.1002 to 1910.1060 do apply to this material or its component(s), OSHA considers this material to be Hazardous.
Other EPA Regulations	No additional information available
STATE	
California Safe Drinking Water and Toxic Enforcement Act of 1988- Proposition 65	This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels that would be subject to the proposition.
California South Coast Air Quality Management District (SCAQMD) Rule 443.1 (VOC's)	A volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonated, ammonium carbonate, 1,1,1-trichloroethane, methylene chloride, FC-23,CFC-113, CFC-12, CFC-11, CFC-22, CFC-114, and CFC-115. By this definition, this not VOC material.
Massachusetts Right to Know Substance List (MSL) [105 CMR 670.000]	Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at levels greater than



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	state specific criterion. The criterion is: $\geq 1\%$. Components with CAS numbers present in this material (Hydrogen Fluoride, CAS # 7664-3) at a level which could require reporting under the statute.
Pennsylvania Right to Know Substance List	Hazardous Substances (PA-HS) must be identified when present in materials at levels greater than state specific criterion. The criterion is: $\geq 1\%$. Components with CAS numbers present in this material (Hydrogen Fluoride, CAS # 7664-3) at a level which could require reporting under the statute.

Section: 16 OTHER INFORMATION

Current Issue Date:	October 14, 2010
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