



Material Safety Data Sheet

1. IDENTIFICATION

PRODUCT NAME: H2-FS A12

CHEMICAL NAME/SYNONYMS: Iron (III) Sulfate, Ferric Sulfate

CHEMICAL FAMILY: Inorganic Salts

CHEMICAL FORMULA: Fe₂(SO₄)₃

For emergencies call Chemtrec at 1-800-424-9300

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: Irritating to skin, eyes, and mucous membranes.

POTENTIAL EFFECTS ON HEALTH: Acute and chronic.

CARCINOGENICITY: Does not contain any known carcinogens or potential carcinogens.

3. COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	COMPONENT	PERCENT
010028-22-5	Ferric Sulfate	50-66% as Fe ₂ (SO ₄) ₃ ·9H ₂ O
7664-93-9	Sulfuric Acid	<0.1%

WHMIS Classification: Class E

4. FIRST-AID MEASURES

GENERAL: If you feel unwell, seek medical attention (show the label or this MSDS if possible). Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SKIN CONTACT: Remove all contaminated clothing, jewelry, and shoes. Wash affected area with soap or mild detergent and running water for at least 15 minutes. If irritation persists, seek medical attention.

EYE CONTACT: Flush immediately with water for at least 15 minutes, occasionally lifting upper and lower lids. Obtain medical attention immediately.

INHALATION: Move to fresh air. Give artificial respiration ONLY if breathing has stopped. Do not use mouth-to-mouth method if victim has ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention immediately.

INGESTION: If conscious, give two (2) glasses of water. DO NOT INDUCE VOMITING. Do not give anything by mouth to an unconscious person. Obtain immediate medical attention.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable. Will not burn

FLAMMABLE LIMITS (LOWER): Not applicable

FLAMMABLE LIMITS (UPPER): Not applicable

AUTO IGNITION TEMPERATURE: Not applicable

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COMBUSTION AND THERMAL DECOMPOSITION PRODUCTS: Oxides of sulfur.

RATE OF BURNING: Does not burn

EXPLOSIVE POWER: Not applicable

SENSITIVITY TO STATIC DISCHARGE: Not available

FIRE AND EXPLOSION HAZARDS: During a fire, oxides of sulfur may be evolved.

EXTINGUISHING MEDIA: THE SUBSTANCE IS NOT COMBUSTIBLE. USE
EXTINGUISHING MEDIA appropriate to the surrounding fire.

NFPA CODES: HEALTH: 2 FIRE: 0 REACTIVITY: 0 SPECIAL HAZARD:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

SPILLS, LEAKS, OR RELEASE: Restrict access until clean-up operations are complete. Wear appropriate Personal Protective Equipment per Section 8. Ensure trained personnel conduct clean up and wear Personal Protective Equipment per Section 8.

Stop leak if possible. Avoid personal risk.

Notify Authorities if release exceeds reportable quantity per Section 15

SMALL SPILLS - Absorb spill with clay or dry material or neutralize with lime, limestone or soda ash and collect in appropriate container for disposal. Neutralization with soda ash can generate carbon dioxide so additional ventilation may be necessary.

LARGE SPILLS - Prevent entry into sewers and confined areas. Dike, if possible. Keep unnecessary people away, isolate area and deny entry. Pump liquid material into appropriate vessels as possible or absorb spill with clay absorbents or non-reactive dry materials and collect in appropriate container for disposal. Neutralize spill residuals carefully with lime, limestone, or soda ash and collect in suitable container for disposal. Flush area with water. This could generate carbon dioxide so additional ventilation may be necessary. Notify the appropriate environmental authorities.

7. HANDLING AND STORAGE

HANDLING: Handle all chemicals with respect. Review the label, this MSDS and any other applicable information before use. Keep separated from incompatible substances. Use appropriate Personal Protective Equipment per Section 8. Handle only with equipment, materials and supplies specified by their manufacturer as being compatible and appropriate for use with this product.

STORAGE REQUIREMENTS: Ensure that all storage vessels are labeled. Avoid skin and eye contact. Wear appropriate protective clothing. Store only in dry rubber-lined, plastic, FRP or stainless steel (304, 316). Keep storage temperatures between 10° and 30° C. Store away from incompatible materials such as alkalis. Keep smaller containers as drums and totes tightly closed when not in use or when empty. Product should be used within one year. Storage facilities should have secondary containment as required by law or regulation. Storage tanks, piping and offloading points should be labeled with appropriate signage to avoid accidents. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**PREVENTIVE MEASURES:**

ENGINEERING CONTROLS: A ventilation system of local/general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. Ensure that eyewash station and safety showers are proximal to the workstation location.

PERSONAL PROTECTION EQUIPMENT:

EYE PROTECTION: Wear splash resistant chemical goggles and, where splashing is possible, a full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

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SKIN PROTECTION: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to avoid skin contact.

RECOMMENDED PROTECTIVE MATERIAL: Neoprene

RESPIRATORY PROTECTION: Under conditions of misting or contact with head gases, respiratory protection may be needed. Consider respirator warning properties before use.

- With limited contact use an appropriate chemical cartridge respirator with acid gas cartridge(s)
- When cleaning, decontaminating or performing maintenance on tanks, containers, piping systems and accessories, and in any other situations where airborne contaminants and/or dust could be generated, use protective equipment to protect against ingestion or inhalation. HEPA or air supplied respirator, full protective coveralls with head cover, gloves and boots or chemical suits, and boots are suggested.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Red brown

ODOR: Acidic

FORM: Liquid

PH: <2

VAPOR PRESSURE (MM HG): N/A

BOILING POINT: 105°C -110°C (220°F - 230°F)

SPECIFIC GRAVITY (20°C): 1.38-1.59

SOLUBILITY (WATER): soluble

VAPOR DENSITY (AIR=1): N/A

PERCENT VOLATILE BY VOL.: N/A

FREEZING POINT: N/A

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition will yield oxides of sulfur.

CHEMICAL STABILITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid contact with mineral acids, excessive heat and bases/alkalis

INCOMPATIBILITY WITH OTHER SUBSTANCES: carbon steel, brasses, and nylon.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION**12. ECOLOGICAL INFORMATION****13. DISPOSAL CONSIDERATIONS**

Review Federal, State, Provincial, and Local government regulations prior to disposal. This material exhibits the characteristic of corrosivity to metals and other building materials and any disposal must comply with hazardous waste disposal requirements. Any residues and/or rinse waters from cleaning of tanks, containers, piping systems and accessories may

14. TRANSPORT INFORMATION

This material is regulated as a DOT Hazardous Material.

US DOT INFORMATION:

UN/NA #	Shipping Name Hazard	Class	Packing Group	ERG	RQ
UN3264,	Corrosive Liquids, Acidic, Inorganic NOS (Ferric Sulfate)	8,	III,	154	1000lbs

15. REGULATORY INFORMATION

USA CLASSIFICATION:

OSHA Classification: Hazardous by definition of Hazard Communication Standard
(29 CFR 1920.1200)

CERCLA: Hazardous substance/reportable quantity (RQ): final RQ = 1000 lb. (454 kg) Based on
anhydrous Ferrous Sulfate (divide by solution concentration to obtain solution weight)

SARA Regulations sections 313 and 40 CFR 372: No

SARA Hazard Categories. SARA SECTIONS 311/312 (40CRF370.21):

Acute	Yes
Chronic	No
Fire	No
Reactive	No
Sudden Release	No
OSHA Process Safety (29CFR191 0.119)	No

Clean Water Act Requirements: Designated as a hazardous substance under section 311
(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean
Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this
substance.

TSCA: This substance or all ingredients of this product are listed on the Chemical Substances
Inventory of the TSCA. Does not require reporting.

Other Regulations/Legislation which applies to this product: California Proposition 65: No

Right-To-Know Lists: Massachusetts, New Jersey, Pennsylvania, California

This product does not contain, nor is it manufactured with, ozone-depleting substances.

CANADIAN CLASSIFICATION

This product has been classified in accordance with the hazard criteria of the CPR (Controlled
Products Regulations) and this MSDS (Material Safety Data Sheet) contains all
information required by the CPR.

Controlled Products Regulation (WHMIS) Classification: E: Corrosive

CEPA I Canadian Domestic Substances List (DSL): The substances in this product are
on the Canadian Domestic Substances List (CEPA DSL).

EEC CLASSIFICATION

EINECS: 233-072-9

16. OTHER INFORMATION

Do not use ingredient information and/ or ingredient percentages in this MSDS as a product specification. For product
specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from
H2O Technical Services.

DISCLAIMER:

We believe that the information in this MSDS is accurate. The suggested procedures are based on experience as of the
date of publication. They are not necessarily either all-inclusive or fully adequate in every circumstance. Also, these
suggestions should not be confused with or followed in violation of applicable laws, regulations, rules or insurance
requirements.

NO WARRANTY IS MADE, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE OR OTHERWISE.