

SAFETY DATA SHEET

Safety Iron Plus


Date Prepared: 11/26/2014

Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name: Safety Iron Plus
 Synonyms: SAFEFE+
 Use: Agricultural, Liquid Micronutrient Fertilizer
 Manufacturer: Chemical Dynamics, Inc.
 4206 Business Lane
 Plant City FL 33566
 Phone: 813-752-4950
 Chemtrec (Emergency) Phone: 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Pictogram	Signal Word	Hazard Class	Hazard Category	Hazard Statement
	WARNING	Skin Irritation	Cat 2	Causes skin irritation
		Eye Irritation	Cat 2A	Causes serious eye irritation
		STOT: SE	Cat 3	May cause respiratory irritation
Precautionary Statements:	<p>Prevention: Wash thoroughly after handling. Wear protective gloves, chemical splash proof goggles, and face protection. Avoid breathing mists, fumes or sprays. Use only outdoors or in a well-ventilated area.</p> <p>Response: <u>If on skin:</u> Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention.</p> <p><u>If in eyes:</u> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.</p> <p><u>If Inhaled:</u> Remove person to fresh air and keep comfortable for breathing. Call poison control or doctor if you feel unwell.</p> <p>Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.</p> <p>Disposal: Dispose of contents/containers in accordance with local/regional/national regulations (See Section 13 of SDS).</p>			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Ammonium Iron Citrate	1185-57-5	214-686-6	8.5%
Ammonium Sulfate	7783-20-2	231-984-1	Proprietary blend of materials not classified as hazardous
Iron Citrate	2338-05-8	222-536-6	
Water	7732-18-5	231-791-2	

See product label for guaranteed analysis.

SECTION 4. FIRST AID MEASURES	
Ingestion:	Rinse mouth. Drink large amounts of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Obtain medical attention.
Skin Contact:	Remove contaminated clothing. Wash with soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention for any breathing difficulty.
Eye Contact:	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute Exposure Symptoms:	Irritation to respiratory tract. Irritation or burning sensation eyes. Prolonged or repeated contact with skin may cause skin irritation. Ingestion of product solution may cause irritation of the gastrointestinal tract to include nausea, vomiting and diarrhea
Chronic Exposure Symptoms:	Not available

SECTION 5. FIRE FIGHTING MEASURES	
Extinguishing Media:	Not Flammable. Use extinguishing media appropriate to surrounding fire. Cool containers with water spray from a distance to avoid rupture from thermal expansion.
Specific Hazards:	This product is an aqueous mixture which will not burn. In a fire, this material may decompose and produce ammonia, sulfur, sulfur oxides and oxides of nitrogen, carbon and iron.
Protective Equipment and Precautions for Fire-Fighters:	Wear self-contained breathing apparatus (SCBA) and full protective gear. Avoid inhaling combustion products. Fire run-off should be contained to prevent possible environmental damage.
NFPA Rating:	Health: 1, Fire: 0, Reactivity: 0

SECTION 6. ACCIDENTAL RELEASE MEASURES	
Precautions:	Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying.
Protective Equipment:	Impervious gloves (rubber, neoprene or nitrile), Long sleeved clothing. Chemical splash-proof goggles, face shield Chemical resistant apron and/or rubber boots may be needed. Clothing and equipment can be washed or laundered for reuse.
Containment:	Stop flow of material if safe to do so. Dike area with diatomaceous earth or sand and maximize recovery. Avoid infiltration of large quantities into drains, surface water, groundwater and soil. Keep out of "waters of the U.S." because of potential aquatic toxicity.
Clean Up:	Pump into a suitable tank or absorb with diatomaceous earth or sand. Sweep up and place into suitable containers for agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations (See Section 13 of SDS).

SECTION 7. HANDLING AND STORAGE	
Precautions for safe handling:	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Do not eat, drink or use tobacco products when handling this material. Apply product in open areas. Keep away from children and pets. Do not contaminate feed, seed or any water sources. Launder work clothes frequently and separate from other laundry.
Conditions for safe storage:	Store in a well-ventilated, cool, dry place, away where freezing is possible. Keep away from any sources of heat or flame. Store locked up. Store totes and smaller containers out of direct sunlight at moderate temperatures. Keep containers tightly closed when not in use. Do not let product go below 32°F. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Store in fiberglass, polypropylene, stainless steel (316L) and HD polyethylene.
Incompatibilities:	This product is not compatible with copper, zinc, or their alloys (i.e. bronze, brass, galvanized metals, etc.). These materials of construction should not be used in piping, handling systems or storage containers for this product.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION			
Component Exposure Limits:	Iron Citrate and Ammonium Iron Citrate	1 mg/m ³	PEL, OSHA (Iron Soluble Salts, as Fe)
		1 mg/m ³	TWA, ACGIH (Iron Soluble Salts, as Fe)
		Not Established	IDLH, NIOSH
		1 mg/m ³	REL, NIOSH (Iron Soluble Salts, as Fe)
		Not Established	STEL, NIOSH
	Ammonium Sulfate	Not Established	PEL, OSHA
		Not Established	TWA, ACGIH
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
Engineering Controls:	Provide local exhaust ventilation and wash facilities.		
Personal Protective Equipment:	<u>Eyes:</u> chemical splash-proof goggles and face shield <u>Skin:</u> Impervious gloves (rubber, neoprene or nitrile), long sleeved clothing and Chemically resistant apron. <u>Respiratory:</u> None required for ambient air concentrations (i.e. in the open under normal agronomic conditions). Use NIOSH approved respirator when dusts, mists, or vapors are present.		
General:	Eye wash stations and safety shower recommended. Good industrial hygiene practices should be followed, such as, washing thoroughly after handling and before eating or drinking.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES			
Appearance:	Dark, clear reddish brown liquid		
Odor:	Rusty, Ammonia odor	UEL / LEL:	Not Applicable
Odor Threshold:	Not Available	Vapor Pressure:	Similar to water
pH:	7 to 9	Density:	1.21 to 1.23 g/cm ³
Melting/Freezing Point:	< 0°C (32°F)	Solubility:	Water
Boiling Point:	>100°C (212°F)	Log_{ow}:	Not Available
Flash Point:	Not Applicable	Auto Ignition Temp:	Not Applicable
Evaporation Rate:	Not Available	Decomposition Temp:	Not Available
Flammability (Solid/Gas):	Not Applicable	Viscosity	Not Available
SECTION 10. STABILITY AND REACTIVITY			
Reactivity:	Stable		
Chemical Stability:	Stable under normal conditions		
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.		
Conditions to avoid:	Elevated temperatures may cause containers to rupture.		
Incompatible Materials:	Strong oxidizing agents, strong acids, strong bases and water reactive substances. Not compatible with copper, zinc, or their alloys (i.e. bronze, brass, galvanized metals, etc.).		
Hazardous Decomposition Products:	Heating this product will evolve ammonia. Decomposition will produce ammonia, sulfur, sulfur oxides and oxides of nitrogen, carbon and iron.		
SECTION 11. TOXICOLOGICAL INFORMATION			
Acute Toxicity:	Iron Citrate: LD50 oral (rat): 1487 mg/kg (100% basis), ATE >2000 mg/kg in product Ammonium Sulfate: LD50 oral (rat): 2840 mg/kg Ammonium Iron Citrate: Not available		
Likely Routes of Exposure:	Inhalation, ingestion or skin absorption		
Symptoms and Signs of Exposure:	<u>Eyes:</u> Contact with the eyes by product mist or solution may cause irritation or a burning sensation. <u>Skin:</u> Prolonged or repeated contact with product mist or solution may cause skin irritation. Absorption is unlikely to occur. <u>Ingestion:</u> Ingestion of product solution may cause irritation of the gastrointestinal tract to include nausea, vomiting and diarrhea. <u>Inhalation:</u> Inhalation of product mist may cause irritation of the nose, throat and respiratory tract.		
Chronic Effects:	None known		
Carcinogenic:	None of this product's components are listed by ACGIH, OSHA, IARC, NIOSH or NTP as carcinogenic.		
Mutagenicity:	Not Available		
Reproductive Toxicity:	Not Available		

SECTION 12. ECOLOGICAL INFORMATION	
Ecotoxicity:	This product is not bioaccumulative.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity:	Ammonium Sulfate LC50 (48 hr) Daphnia magna (Water flea): 14 mg/L. Freshwater; static LC50 (96 hr) Poecilia reticulata (guppy): 126 mg/L. Freshwater, renewal LC50 (96 hr) Oncorhynchus mykiss (Rainbow Trout): 36.7 mg/L. Freshwater, flow-through Iron Citrate: Not available Ammonium Iron Citrate : LD50 (96 hr) Anguilla japonica (Japanese Eel): 123 mg/kg bdwt, injection

SECTION 13. DISPOSAL CONSIDERATIONS	
General Information:	None
Disposal Instructions:	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations. Containers may be triple rinsed and offered for recycling

SECTION 14. TRANSPORT INFORMATION	
This material is not hazardous as defined by 49 CFR 172.101 by the US Department of Transportation	
Proper Shipping Name:	Not Applicable
Hazard Class:	Not Applicable
UN Identification #:	Not Applicable
Packing Group:	Not Applicable
Required Label(s):	Not Applicable
Emergency Response Guide Number:	Not Applicable
Marine Pollutant:	No

SECTION 15. REGULATORY INFORMATION	
TSCA Inventory Status	All intentional ingredients listed on the TSCA inventory.
DSCL (EEC) Status	All intentional ingredients listed on the DSCL inventory.
United States – SARA Hazard Category:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories: Fire – No, Pressure – No, Acute – Yes, Chronic – No, Reactive – No
SARA Title III Information:	This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Iron Ammonium Citrate CAS No. 1185-57-5	CERCLA RQ (pounds): 1000 SARA Reporting, 302: No SARA Reporting, 304: No SARA Reporting, 313: Yes
Iron Citrate, Ammonium Sulfate	CERCLA RQ (pounds): No SARA Reporting, 302: No SARA Reporting, 304: No SARA Reporting, 313: No
Federal Insecticide, Fungicide, and Rodenticide Act	This product is not a pesticide.
State Regulations:	Other state regulations may apply. Check individual state requirements.

SECTION 16. OTHER INFORMATION

Date of Revision:	11/26/2014, revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.
Disclaimer:	The information contained in this SDS refers only to the specific material designated and does not relate to any process or use with any other materials. This information is based on data believed to be accurate and reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Because safety standards and regulations are subject to change and because Chemical Dynamics, Inc. has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. No warranty, expressed or implied, and no liability is assumed by Chemical Dynamics, Inc. in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.