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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	30088
NAME:	Iron(III) chloride hexahydrate
SYNONYMS:	Ferric chloride hexahydrate
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)
ACUTE TOXICITY, ORAL (CATEGORY 4), H302
SKIN IRRITATION (CATEGORY 2), H315

SERIOUS EYE DAMAGE (CATEGORY 1), H318

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS
PICTOGRAM**



SIGNAL WORD DANGER

HAZARD STATEMENT(S)

H302 HARMFUL IF SWALLOWED.
H315 CAUSES SKIN IRRITATION.
H318 CAUSES SERIOUS EYE DAMAGE.

PRECAUTIONARY STATEMENT(S)

P264 WASH SKIN THOROUGHLY AFTER HANDLING.
P270 DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.
P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.
P301 + P312 + P330 IF SWALLOWED: CALL A POISON CENTER/ DOCTOR IF YOU FEEL UNWELL. RINSE MOUTH.
P302 + P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.
P305 + P351 + P338 + P310 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER/ DOCTOR.
P332 + P313 IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ ATTENTION.
P362 TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.
P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS NONE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$
MW: 270.3
CAS-NO. 10025-77-1

PURITY: 97 - 102% (Assay by titration)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
Iron(III) chloride hexahydrate		
	ACUTE TOX. 4; SKIN IRRIT. 2; EYE DAM. 1; H302, H315, H318 CONCENTRATION LIMITS: >= 1 %; MET. CORR. 1, H290;	<= 100 %

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL ADVICE FIRST AIDERS NEED TO PROTECT THEMSELVES. SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.

IF INHALED AFTER INHALATION: FRESH AIR. CALL IN PHYSICIAN.

IN CASE OF SKIN CONTACT IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CALL A PHYSICIAN IMMEDIATELY.

IN CASE OF EYE CONTACT AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. IMMEDIATELY CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.

IF SWALLOWED AFTER SWALLOWING: MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST), AVOID VOMITING (RISK OF PERFORATION). CALL A PHYSICIAN IMMEDIATELY. DO NOT ATTEMPT TO NEUTRALISE.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED NO DATA AVAILABLE

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA
USE EXTINGUISHING MEASURES THAT ARE
APPROPRIATE TO LOCAL CIRCUMSTANCES AND THE
SURROUNDING ENVIRONMENT.

UNSUITABLE EXTINGUISHING MEDIA
FOR THIS SUBSTANCE/MIXTURE NO LIMITATIONS OF
EXTINGUISHING AGENTS ARE GIVEN.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

HYDROGEN CHLORIDE GAS
IRON OXIDES
NOT COMBUSTIBLE.
AMBIENT FIRE MAY LIBERATE HAZARDOUS VAPOURS.

ADVICE FOR FIREFIGHTERS

STAY IN DANGER AREA ONLY WITH SELF-CONTAINED
BREATHING APPARATUS. PREVENT SKIN CONTACT BY
KEEPING A SAFE DISTANCE OR BY WEARING
SUITABLE PROTECTIVE CLOTHING.

FURTHER INFORMATION

SUPPRESS (KNOCK DOWN) GASES/VAPOURS/MISTS
WITH A WATER SPRAY JET. PREVENT FIRE
EXTINGUISHING WATER FROM CONTAMINATING
SURFACE WATER OR THE GROUND WATER SYSTEM.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

ADVICE FOR NON-EMERGENCY PERSONNEL: AVOID
INHALATION OF DUSTS. AVOID SUBSTANCE CONTACT.
ENSURE ADEQUATE VENTILATION. EVACUATE THE
DANGER AREA, OBSERVE EMERGENCY PROCEDURES,
CONSULT AN EXPERT.
FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PRECAUTIONS

DO NOT LET PRODUCT ENTER DRAINS.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

COVER DRAINS. COLLECT, BIND, AND PUMP OFF
SPILLS. OBSERVE POSSIBLE MATERIAL RESTRICTIONS
(SEE SECTIONS 7 AND 10). TAKE UP DRY. DISPOSE OF
PROPERLY. CLEAN UP AFFECTED AREA. AVOID
GENERATION OF DUSTS.

REFERENCE TO OTHER SECTIONS

FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING FOR PRECAUTIONS SEE SECTION 2.2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE.
KEEP IN A DRY PLACE.

HYGROSCOPIC!

Store at RT

SPECIFIC END USE(S) APART FROM THE USES MENTIONED IN SECTION 1.2
NO OTHER SPECIFIC USES ARE STIPULATED

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

INGREDIENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS-NO.	VALUE	CONTROL PARAMETERS	BASIS
Iron(III) chloride hexahydrate	10025-77-1	TWA	1 MG/M3	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		TWA	1 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		PEL	1 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS (TITLE 8, ARTICLE 107)

PREDICTED NO EFFECT CONCENTRATION (PNEC)

COMPARTMENT	VALUE
FRESH WATER SEDIMENT	49.5 MG/KG
REMARKS	AS FE
SEA WATER	49.5 MG/KG
	AS FE
SEWAGE TREATMENT PLANT	500 MG/L
	AS FE
SOIL	55.5 MG/KG
	AS FE

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS IMMEDIATELY CHANGE CONTAMINATED CLOTHING. APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND FACE AFTER WORKING WITH SUBSTANCE.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU). TIGHTLY FITTING SAFETY GOGGLES

SKIN PROTECTION THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN 16523-1 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES.

FULL CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:KCL 741 DERMATRIL L

THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN 16523-1 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES.

SPLASH CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:KCL 741 DERMATRIL L

BODY PROTECTION COMPLETE SUIT PROTECTING AGAINST CHEMICALS, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

**RESPIRATORY
PROTECTION**

RECOMMENDED FILTER TYPE: FILTER B-(P2) THE ENTREPRENEUR HAS TO ENSURE THAT MAINTENANCE, CLEANING AND TESTING OF RESPIRATORY PROTECTIVE DEVICES ARE CARRIED OUT ACCORDING TO THE INSTRUCTIONS OF THE PRODUCER. THESE MEASURES HAVE TO BE PROPERLY DOCUMENTED. REQUIRED WHEN DUSTS ARE GENERATED. OUR RECOMMENDATIONS ON FILTERING RESPIRATORY PROTECTION ARE BASED ON THE FOLLOWING STANDARDS: DIN EN 143, DIN 14387 AND OTHER ACCOMPANYING STANDARDS RELATING TO THE USED RESPIRATORY PROTECTION SYSTEM.

**CONTROL OF
ENVIRONMENTAL
EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Brownish yellow solid / LUMPS
ODOUR	NO DATA AVAILABLE
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NO DATA AVAILABLE
MELTING POINT/FREEZING POINT	37 °C (Approx.)
INITIAL BOILING POINT AND BOILING RANGE	
FLASH POINT	
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	DOES NOT IGNITE - A.10. (REGULATION (EC) NO 440/2008, ANNEX A)THE PRODUCT IS NOT FLAMMABLE.
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	NO DATA AVAILABLE
VAPOUR PRESSURE	NO DATA AVAILABLE
VAPOUR DENSITY	NO DATA AVAILABLE
RELATIVE DENSITY	
WATER SOLUBILITY	SOLUBLE
PARTITION COEFFICIENT: N- OCTANOL/WATER	NOT APPLICABLE FOR INORGANIC SUBSTANCES
AUTO-IGNITION TEMPERATURE	NO DATA AVAILABLE
DECOMPOSITION TEMPERATURE	NO DATA AVAILABLE
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE
OTHER SAFETY INFORMATION	NO DATA AVAILABLE

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	NO DATA AVAILABLE
CHEMICAL STABILITY	THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS (ROOM TEMPERATURE).
POSSIBILITY OF HAZARDOUS REACTIONS	RISK OF EXPLOSION WITH: ALKALI METALS ETHYLENE OXIDE
CONDITIONS TO AVOID	EXPOSURE TO MOISTURE.
INCOMPATIBLE MATERIALS	MILD STEEL METALS
HAZARDOUS DECOMPOSITION PRODUCTS	IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - 316 MG/KG REMARKS: (RTECS) THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: IRON(III) CHLORIDE INHALATION: NO DATA AVAILABLE LD50 DERMAL - RAT - MALE AND FEMALE - > 2,000 MG/KG (OECD TEST GUIDELINE 402) REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: IRON DICHLORIDE NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN RABBIT RESULT: IRRITATING REMARKS: (IUCLID)

SERIOUS EYE DAMAGE/EYE IRRITATION	EYES RABBIT RESULT: SEVERE IRRITATIONS (OECD TEST GUIDELINE 405)
RESPIRATORY OR SKIN SENSITISATION	NO DATA AVAILABLE
GERM CELL MUTAGENICITY	TEST TYPE: AMES TEST METHOD: OECD TEST GUIDELINE 471 RESULT: NEGATIVE TEST TYPE: MUTAGENICITY (MAMMAL CELL TEST): MICRONUCLEUS. METHOD: OECD TEST GUIDELINE 487 RESULT: NEGATIVE TEST TYPE: IN VIVO MICRONUCLEUS TEST SPECIES: MOUSE RESULT: NEGATIVE REMARKS: (EXTERNAL MSDS)
CARCINOGENICITY	
IARC:	NO INGREDIENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN BY IARC.
NTP:	NO INGREDIENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.
OSHA:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON OSHA S LIST OF REGULATED CARCINOGENS.
REPRODUCTIVE TOXICITY	NO DATA AVAILABLE
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	NO DATA AVAILABLE
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	NO DATA AVAILABLE
ASPIRATION HAZARD	NO DATA AVAILABLE

**ADDITIONAL
INFORMATION**

REPEATED DOSE TOXICITY - RAT - MALE - ORAL - 98
D - NOAEL (NO OBSERVED ADVERSE EFFECT LEVEL) -
277 MG/KG

REMARKS: SUBCHRONIC TOXICITY

RTECS: NO5425000

OVERDOSE OF IRON COMPOUNDS MAY HAVE A
CORROSIVE EFFECT ON THE GASTROINTESTINAL
MUCOSA AND BE FOLLOWED BY NECROSIS,
PERFORATION, AND STRICTURE FORMATION.
SEVERAL HOURS MAY ELAPSE BEFORE SYMPTOMS
THAT CAN INCLUDE EPIGASTRIC PAIN, DIARRHEA,
VOMITING, NAUSEA, AND HEMATEMESIS OCCUR.
AFTER APPARENT RECOVERY A PERSON MAY
EXPERIENCE METABOLIC ACIDOSIS, CONVULSIONS,
AND COMA HOURS OR DAYS LATER. FURTHER
COMPLICATIONS MAY DEVELOP LEADING TO ACUTE
LIVER NECROSIS THAT CAN RESULT IN DEATH DUE
TO HEPATIC COMA.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,
PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE
NOT BEEN THOROUGHLY INVESTIGATED.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY	NO DATA AVAILABLE
PERSISTENCE AND DEGRADABILITY	NOT APPLICABLE FOR INORGANIC SUBSTANCES
BIOACCUMULATIVE POTENTIAL	NO DATA AVAILABLE
MOBILITY IN SOIL	NO DATA AVAILABLE
RESULTS OF PBT AND VPVB ASSESSMENT	PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED
OTHER ADVERSE EFFECTS	PRODUCT REACTS WITH WATER. THE FOLLOWING MAY DEVELOP AFTER REACTION OF THE PRODUCT WITH WATER: HYDROCHLORIC ACID DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT	WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE NATIONAL AND LOCAL REGULATIONS. LEAVE CHEMICALS IN ORIGINAL CONTAINERS. NO MIXING WITH OTHER WASTE. HANDLE UNCLEARED CONTAINERS LIKE THE PRODUCT ITSELF.
CONTAMINATED PACKAGING	DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)	
PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IRON TRICHLORIDE HEXAHYDRATE)
UN NUMBER:	3077
CLASS:	9
PACKING GROUP:	III
REPORTABLE QUANTITY (RQ):	1000 LBS
POISON INHALATION HAZARD:	NO
IMDG	NOT DANGEROUS GOODS
IATA	NOT DANGEROUS GOODS

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS	THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A SECTION 302 EHS TPQ.
SARA 313 COMPONENTS	THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.
SARA 311/312 HAZARDS	ACUTE HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
Iron(III) chloride hexahydrate	10025-77-1	

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H302	HARMFUL IF SWALLOWED.
H315	CAUSES SKIN IRRITATION.
H318	CAUSES SERIOUS EYE DAMAGE.

MSDS LEGEND

MW:	MOLECULAR WEIGHT
MF:	MOLECULAR FORMULA
VOC:	VOLATILE ORGANIC COMPOUNDS
ACGIH:	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS
CAS:	CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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