

MATERIAL SAFETY DATA SHEET

Prepared in accordance with the "Regulation on Safety Data Sheets on Hazardous Substances and Mixtures (Official Gazette dated 13.12.2014 and numbered 29204) and (EU) No 1272/2008

FERROUS(IRON) SULPHATE HEPTAHYDRATE

<i>Number of Edits: 1</i>		<i>Preparation Arrangement:</i>	
1. IDENTIFICATION OF THE MIX AND OF THE COMPANY/ DISTRIBUTOR			
1.1 Mixture ID			
<i>Trade Name</i>	FERROUS(IRON) SULPHATE HEPTAHYDRATE		
<i>EG/EINECS no</i>	231-753-5		
<i>CAS no</i>	7720-78-7		
<i>Formule</i>	FeSO₄.7H₂O		
1.2 Identified and Suggested Uses of the Mixture			
<i>Designated Use</i>	<i>Soil additive/regulator, pesticide, feed additive and antiseptic; Leather and fabric color stabilizer in textile, Refining of Copper; pharmaceutical making, wood preservative, Engraving and Lithography; In mineral ore processing, rubber and steel processing. in the cement industry</i>		

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2HAZARDS IDENTIFICATION**2.1 Classification of the Mixture:****2.1.1 Hazard classification**

Akut Zehirlenme. 4 - H302; Göz Hasarı 2 - H319; Cilt Hasarı 2 H315

2.2 Label Elements**2.2.1. Labeling****Product ID**

The component that determines the hazard for the label

Ferrous(iron) sulphate heptahydrate

Hazard signs

GHS07

word of warning

CAUTION

Hazard Statements

H302 Harmful if swallowed.

H319 Causes serious eye damage.

H315 Causes serious skin damage.

Precautionary Statements

P280 Wear protective gloves / protective clothing / eye protection / face protection.

P501 Dispose of contents/container. Dispose of waste and residues in accordance with local government requirements.

Additional Hazard Information Statements

P264 Wash and clean thoroughly after exposure/use.

P270 Do not eat, drink or smoke while using this product.

P301 + P312 IF SWALLOWED: Consult a hospital or doctor/physician if you feel unwell.

P330 Rinse mouth with clean water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. remove contact lenses, if present and easy to remove. Continue rinsing.

P337 + P313 If eye irritation persists: seek medical advice.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P321 Special treatment, treatment

P333 + P313 If skin irritation or rash occurs: Get medical advice

P362 Remove and wash contaminated clothing.

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2.3 Other Damages

The product is acidic when dissolved in water.

3. COMPOSITION / INFORMATION ON INGREDIENTS**3.1 Substances**

The product consists of chemicals in the compound.

3.2 Mixtures

Dangerous substances it contains:

SUBSTANCE OR COMPOUND	Hazard Definition	EINECS ¹ NO- CAS ² NO.	Weight %(V)
Ferrous(iron) sulphate heptahydrate	Akut Tok. 4 ;H302 Göz hsr 1; H319 cilt hsr 1;H315	231-753-5 7720-78-7	100

3.2.1 Notes: Unspecified**3.2.2 M-Factor: Unspecified**

Specific Concentration Limits: Unspecified

3.2.3 Additional warnings:

All of the related damage definition sentences are given in the 16th section.

4. FIRST AID MEASURES**4.1 Description of First Aid Measures****4.1.1 General**

· If you think you are in danger or are observing symptoms, seek medical advice.

4.1.2 Respiratory:

If possible, stay calm in a clean or well-ventilated environment, away from the hazardous area, and seek medical assistance.

4.1.3 Skin Contact:

Remove contact clothing and wash all contacted areas with plenty of soap and water. If irritation occurs, seek medical assistance.

4.1.4 Swallowing:

If swallowed, do not induce vomiting and seek medical assistance as soon as possible.

4.1.5 Eye Contact:

Immediately wash with plenty of water for 15 minutes, seek medical support.

4.2 Significant symptoms and effects, both acute and delayed

In case of inhalation	Shortness of breath/frequency
Skin Contact	Skin/skin irritation
Eye Contact	eye irritation
(Digestive) In case of ingestion	Stomache ache
Other (Long Term Effects)	No information.

4.3 Early Signs of Need for Medical Intervention and Special Treatment

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As noted above, if irritation, shortness of breath/frequency persists, or if swallowed, seek medical attention immediately.

5. FIRE FIGHTING MEASURES**5.1 Fire Extinguishers:**

Suitable Extinguishing Media	The product is not flammable. Suitable for other objects around use fire extinguisher (micronized water, CO2, Foam).
Unsuitable Extinguisher environments	All extinguishing media are suitable, if suitable for surrounding objects.
Other Remarks	No information

5.2 Special Hazards Caused by the Mixture:

Damages Related to Combustion	unusual fire hazard
Explosion-Related Damages	unusual explosion hazard
Hazards Related to Reactivity	When heated above 400°C, the product contains iron oxide and sulfur dioxide. emits toxic fumes. The material is acidic when dissolved in water and can form hydrogen gas when it reacts with magnesium.
Other Remarks	No information

5.3 Advice for Fire Fighters:

Fire Fighting Instructions	Follow all normal fire fighting procedures.
Protective Equipment for Fire Fighting Personnel	Wear appropriate protective equipment and be conscious, if possible should act with breathing devices/apparatuses that completely cover the face.
Other Remarks	No information

5.4 Other informations

No information

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal Precautions, Protective Equipment and Emergency Procedures:**

Use exposure control and personal protective measures detailed in section 8.

6.1.1 For Non-Emergency Personnel

Protective Equipment	Use protective gloves, goggles and suitable protective clothing.
Emergency Procedures	Provide adequate ventilation.
Other Remarks	No information

6.1.2 For Persons Responding in an Emergency

Protective Equipment	Do not attempt to intervene without appropriate protective equipment
Emergency Procedures	For more information see section 8: "Exposure controls/personal protection".
Other Remarks	No information

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6.2 Environmental Precautions:

Prevent entry into sewers and other water sources.

6.3 Methods and Materials for Conservation and Cleaning:

Avoid dust formation. Collect the dust using a special dust vacuum cleaner with a particle filter or sweep it carefully into the closed container. Cover the product with sand or earth and carefully clean all products. Put it in another clean and dry container, seal it and remove it from the field. Do not clean the contaminated area with water.

6.3.1 Spill Control Recommendations

No information

6.3.2 Spill Cleanup Advice

No information

6.4 Other Information:

No information

6.5 References to Other Sections:

Get information about safe use from chapter 7.

Get information about personal protective equipment from chapter 8.

Get information about liquidation from chapter 13.

7. HANDLING AND STORAGE**7.1 Precautions for Safe Handling:**

No special precautions are required when used correctly

7.1.1 General Handling Recommendations:**7.1.1.1 Warnings for Safe Handling**

Avoid dust formation. Do not breathe dust. Keep the product in a well-ventilated area or make sure to use adequate respiratory protection (dust mask). Avoid contact with skin and eyes with work clothes, gloves and safety glasses. Do not eat, smoke or drink liquids during use. Be sure to close the packaging well after use. Precautions for Safe Use/Transport: Prevent unauthorized access. Avoid contact with skin and eyes. Do not dry the product. Hygiene Precautions: Do not eat, drink or smoke while using this product. Before removing contaminated/contacted clothing, wash immediately with plenty of water if it comes into contact with your skin.

7.1.1.2 Warnings Regarding Incompatibilities of Mixtures

No information

7.1.1.3 Environmental Warnings

No information

7.1.1.4 Additional Warnings

No information

7.1.2 General Occupational Hygiene Recommendations:

Always wash your hands after handling the product

7.2 Conditions for Safe Storage, Including Incompatibilities:

Technical Measures

In a well-ventilated place with the container tightly closed. keep it.

Storage conditions

Store in its original container.

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Preparation Arrangement:

Common Storage Terms	No information
Maximum Storage Time	No information
Incompatible Substances	No information
7.3 Specific End Uses:	
No information	

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control Parameters:**

In the working environment, exposure limit during working hours (OEL TWA 8 hours)

Please review existing laws, regulations and laws for different countries. In case the standards are not met, make sure that the employees use protective clothing and face masks.

About FeSO₄ in REACH DNEL, PNEC, and ERV(in CSR) regulations: Occupational Health/Safety (Iron Sulphate)

Long-term systemic skin/skin effects: DNEL = 137 mg/m³ Other effects not observed, not mentioned.

Environmental Effects (Iron

Sulphate):

Suda : PNEC = 7,8 µg/l (tatlı su)

PNEC = 5,2 µg/l (tuzlu su)

PNEC = 87 mg/kg dw (tatlı su)

PNEC = 676 mg/kg dw (tuzlu su)

8.2 Exposure controls

Appropriate Engineering Controls: Natural ventilation should be adequate for normal conditions of use. Local exhaust ventilation (LEV) is recommended.

Worker Equipment: Gloves, goggles, dust mask and suitable protective clothing. Hand Protection: Use gloves.

Eye Protection: Use goggles or a mask.

Skin and Skin Protection: Use appropriate clothing.

Respiratory: Unless local exhaust ventilation (LEV) is used, a dust mask with a suitable filter is required.

Environmental: Do not allow the product to be discharged/released into the environment in an uncontrolled manner.

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9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on Basic Physical and Chemical Properties	
Appearance	Solid, Blue Crystals or Crystalline Powder
Smell	no
olfactory threshold	Not applicable
pH (20° C, direct)	4.0
Suitable room temperature (°C)	No information
Melting Point (°C)	110 °C
Freezing Point/range(°C)	Not applicable
Boiling Point (°C)	110°C
Ignition temperature	Not applicable
Flash Point(Closed Cup) (°C)	Not applicable
flammability	Not applicable
explosive limits	Not applicable
Density g/ml	1,200-1,230 kg/m ³
Viscosity(cp)	Not applicable
specific weight	No information
Partition Coefficient: n-octanol/water (log Pow)	No information
Relative Density g/cm ³	2,286
Evaporation Pressure mm/ Hg @ 25°C	7.3mm
Explosive Properties	No information
Specific Gravity gr/cm ³	No information
Descriptions	No information
9.2 Other informations	
Resolution (g/L)	22g / 100ml
Solubility in Ester, Ketone and Hydrocarbons	No information
UOB contents	No information
<u>Note: The above properties have been determined according to the methods stipulated in Annex-1 Part A of the "Regulation on the Test Methods to be Applied in the Determination of the Physico-Chemical, Toxicological and Ecotoxicological Properties of Substances and Mixtures" or another comparable method.</u>	
The product is hygroscopic and reacts with acid	
10 STABILITY AND REACTIVITY	
10.1 Reaction:	The product is stable under normal transport and storage conditions.
10.2 Chemical Stability:	The product is stable under normal transport and storage conditions, but is hygroscopic.
10.3 Possibility of Harmful Reaction:	
10.4 Conditions to Avoid: (Under conditions to be avoided, such as temperature, pressure, light, shock, etc.)	Avoid exposure to high temperatures and weather, climatic changes, Keep it dry to avoid Avoid accumulation of dust and debris so that it does not enter drains or other waterways
10.5 Substances to be avoided: (Conditions related to water, air, acids, bases, oxidizers or any other special substance that can cause dangerous reaction):	

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<i>ferrous oxides. Sulfur oxides</i>	
10.6 Harmful Decomposition Products:	
Hazardous Decomposition Substances:	
<i>Possibility to decompose to unstable products</i>	<i>No information</i>
<i>The need for stabilizers and the need for stabilizers availability</i>	<i>No information</i>
<i>Possibility of harmful exothermic reaction</i>	<i>No information</i>
<i>Change in physical appearance, if any importance for security</i>	<i>No information</i>
<i>In contact with water, any a harmful decomposition product</i>	<i>No information</i>
<i>Hazardous decomposition products</i>	<i>No information</i>
<i>Hazardous polymerization products</i>	<i>No information</i>

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxic Effects:	<i>No information</i>
11.1.1 Acute Toxicity	<i>Ingestion or prolonged inhalation may cause serious damage to health.</i>
11.1.2 Skin Corrosion/Irritation	<i>Skin contact may cause irritation. Prolonged contact may cause dermatitis.</i>
11.1.3 Serious Eye Damage/Irritation	<i>It can irritate and cause corneal damage.</i>
11.1.4 Respiratory Or Skin Sensitization	<i>Could not be classified</i>
11.1.5 Germ Cell Mutagenicity	<i>Could not be classified</i>
11.1.6 carcinogenicity	<i>It is considered not</i>
11.1.7 Reproductive Toxicity	<i>Could not be classified</i>
11.1.8 Specific Target Organ Toxicity-Single Exposure (BHOT-Tek)	<i>Could not be classified</i>
11.1.9 Specific Target Organ Toxicity-Repeated Exposure (BHOT-Tekrarlı)	<i>Prolonged exposure (over years) can cause chronic effects as above and damage the kidneys and liver.</i>
11.1.10 Aspiration Damage	<i>Could not be classified</i>
11.2 Information on Possible Routes of Exposure	
In case of inhalation	No information
Skin Contact	No information
Eye Contact	No information
(Digestive) In case of ingestion	No information

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Preparation Arrangement:

Target Organs	No information
Medical Symptoms	No information
Medical Warnings	No information
11.3 Information on Physical, Chemical and Toxicological Properties	
No information	
11.4 Chronic Effects with Short and Long-Term Exposure as well as Delayed or Immediate Effects	
No information	
11.5 Interactive Effects	
No information	
11.6 Absence of Private Data	
No information	
11.7 Mixture and Substance Comparison Information	
No information	
11.8 Other informations	
No information	
11.9 Additional Toxicological warnings:	
No information	

12. ECOLOGICAL INFORMATION

12.1 Toxicity:	
Very toxic to aquatic life, LC 50/96 hour values for fish >1 mg /l	
12.1.1 Akude Toksisite:	
No information	
12.2 Persistence and Degradability:	
Persistence Potential in Relevant Environmental Environment	When released into soil or water, the material is not expected to decompose harmlessly into the environment.
Biodegradation in Relevant Environmental Environment potential	No information
By Other Processes Like Oxidation Or Hydrolysis Degradability Potential	No information
Related to Decomposition Half-Life	No information
Effect on Waste Water Treatment Plants	No information
12.3 Bioaccumulation Potential:	
Accumulation of the product in the biological environment (biota)potential	Bioaccumulation along the food chain it could be
Potential for product to pass through food	No information
Log Kow or BCF value	No information

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12.4 Mobility in Soil:	
<i>In the soil, the material will leach into the groundwater.</i>	
Surface tension	No information
Juice Threat Class	No information
Effect on Drinking Water	No information
Environmental known or estimated	No information
12.5 Results of PBT and vPvB assessment:	
<i>Not applicable</i>	
12.6 Other Adverse Effects:	
<i>Ozone Depletion (Reduction) potential</i>	No information
<i>Photochemical Ozone Generation Potential</i>	No information
<i>Endocrine Disruptive Potential</i>	No information
<i>Global Heating (Greenhouse Effect) Potential</i>	No information
<i>Other Adverse Effects on the Environment and/or Environmental Behavior (exposure)</i>	No information
12.7 Additional info:	
<i>Do not allow it to be released into the environment. See sections 6, 7, 13, 14 and 15 for information on accidental release measures, transportation and waste disposal.</i>	
13. DISPOSAL INFORMATION	
13.1 Waste Treatment Methods:	
<i>Consult local authorities for disposal recommendations.</i>	
13.2 Safe Disposal:	
<i>The product must be disposed of in accordance with official regulations.</i>	
13.3 European Waste Catalogue and Hazardous Waste List Number:	
<i>No information</i>	
13.4 Uncleaned Packages:	
<i>No information</i>	
13.5 Recommended Cleaning Agent:	
<i>No information</i>	
13.6 Additional info::	
<i>No information</i>	

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14. TRANSPORT INFORMATION				
	ADR³/RID⁴	ADNR⁵	IMDG⁶	ICAO⁷/IATA⁸
FORM OF TRANSPORTATION	HIGHWAY	RIVER CHANNEL	SEAWAY	AIRLINE
14.1 UN NUMBER	There is no damage under ADR			
SYMBOL	There is no damage under ADR			
14.2. SUITABLE FLOUR TRANSPORTATION NAME	There is no damage under ADR			
DEFINITION OF SHIPPING DOCUMENTS	-	-	-	-
14.3. TRANSPORTATION HARMFUL CLASS	-	-	-	-
14.4. PACKAGING GROUP	-	-	-	-
CLASSIFICATION CODE	-	-	-	-
LABELING NO	-	-	-	-
EmS	-	-	-	-
14.6. SPECIAL PRECAUTIONS FOR THE USER	No information			
14.7. MARPOL 73/78 ek II ve IBC bulk transportation by code	Not applicable			

15. REGULATORY INFORMATION**15.1 Specific safety, health and environmental legislation for the substance or mixture:**

- Product; "Classification, Labeling and Packaging of Substances and Mixtures"
- It has been classified and labeled according to the procedures and principles stipulated in the "Regulation on" and "EU legislation".
 - Review the following regulations for legislation or other national measures that may be relevant to implement the provisions of this safety data sheet.
 - Regulation on Safety Data Sheets Regarding Harmful Substances and Mixtures
 - Regulation on Classification, Labeling and Packaging of Substances and Mixtures
 - Regulation on Restrictions on Production, Placement on the Market and Use of Certain Hazardous Substances, Preparations and Goods
 - Occupational Health and Safety Law
 - Regulation on Health and Safety Precautions in Working with Carcinogenic and Mutagen Substances
 - Waste Management Regulation
 - Regulation on Preventing Major Industrial Accidents and Reducing Their Effects

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16. OTHER INFORMATIONS**16.1 Legal Instruments:**

This document, in accordance with (EC) No 1907/2006 (REACH) and ISO 11014-1, on "Safety Data Sheets for Hazardous Substances and Mixtures" dated 13 December 2014 and numbered 29204 It has been prepared and approved by accredited expert personnel, prepared within the framework of the "Regulation" and documented as stipulated by the regulation.

16.2 Prepared/Edited/Published Safety Data Sheet:

Expert Accreditation No.: TÜV/ 11.09.01

16.3 Reissue Date:

14.11.2022

16.4 Accreditation Holder:

Ayşe Fulya Keçelioğlu

16.5 Edits/Comments:

It has been arranged according to the regulation numbered 13 December 2014 and 29204.

16.6 Other Topics:

- *Please contact our sales department for our training suggestions for the safe use of the product.*
- *Please contact our sales department for recommended restrictions on the use of the product and non-legal recommendations.*
- *In order to ensure the protection of human health and the environment, it is recommended to receive appropriate training for workers to read and use the safety data sheets and label information in a clear way against the exposure of the product and in order to create a general safety culture.*
- *Key sources of information used in editing this safety data sheet;*
- *Safety Data Sheet(s) prepared by the manufacturer of the product*
- *"Regulation on Safety Data Sheets on Hazardous Substances and Mixtures" and its annexes,*
- *"Regulation on Classification, Labeling and Packaging of Substances and Mixtures" and its annexes*
- *"Regulation on Health and Safety Precautions in Working with Carcinogenic and Mutagen Substances" and its annexes,*
- *Other relevant local regulations*
- *UN ADR, IMDG, IATA lists, ECHA and relevant EU directives, Other helpful resources.*

16.7 Additional info:

- *The information provided in this Safety Data Sheet has been prepared based on the best available experience, knowledge and beliefs at the time of preparation.*
- *Unless stated in the document, this information is valid only for the specified mixture and may not be valid if this mixture is used with other substances or used in any other process.*
- *Observe the information in the Safety Data Sheet for use.*
- *This information is based on our current knowledge.*
- *This Safety Data Sheet describes the product according to the appropriate safety regulations, but does not guarantee the assurance of product properties.*

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- *It does not constitute any warranty and product specifications do not establish a legally valid contractual relationship.*

¹ EINECS: European Inventory of Chemicals

² CAS: Service registration number of chemicals

³ ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

⁴ RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

⁵ ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways

⁶ IMDG: International Maritime Code for Dangerous Goods

⁷ ICAO: International Civil Aviation Organization

⁸ IATA: International Air Transport Association