



SAFETY DATA SHEET FERRIC CHLORIDE

Commission Regulation (EU) 2020/878 of 18 June 2020.
According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577, as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	FERRIC CHLORIDE
Chemical name	FERRIC CHLORIDE
Product number	DD.44.19
CAS number	7705-08-0
EC number	231-729-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Potable water clarification and purification ,As coagulant in sewage and in Industrial waste water treatment ,In the textiles and metal industry
Uses advised against	No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier	KORUMA KLOR ALKALİ SAN. VE TİC. A.Ş. Deniz Mah. Petrol Ofisi Cad. No:43 Derince / KOCAELİ - TURKEY Phone: +90(262) 239 22 70 E-mail : koruma@koruma.com.tr web: koruma.com
Contact person	koruma@koruma.com.tr
Manufacturer	KORUMA KLOR ALKALİ SAN. VE TİC. A.Ş. Deniz Mah. Petrol Ofisi Cad. No:43 Derince / KOCAELİ - TURKEY Phone: +90(262) 239 22 70 E-mail : koruma@koruma.com.tr web: koruma.com

1.4. Emergency telephone number

Emergency telephone	Koruma Phone: +90 262 239 22 70
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318
Environmental hazards	Not Classified

2.2. Label elements

EC number	231-729-4
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Hazard pictograms



FERRIC CHLORIDE

Signal word	Danger
Hazard statements	H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage.
Precautionary statements	P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 If skin irritation occurs: Get medical advice/ attention.
Contains	Ferric Chloride

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1. Substances

Ferric Chloride	40%
CAS number: 7705-08-0	EC number: 231-729-4
Classification	
Acute Tox. 4 - H302	
Skin Irrit. 2 - H315	
Eye Dam. 1 - H318	

The full text for all hazard statements is displayed in Section 16.

Product name	FERRIC CHLORIDE
Chemical name	FERRIC CHLORIDE
CAS number	7705-08-0
EC number	231-729-4

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.
Ingestion	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention.
Skin contact	Rinse with water.
Eye contact	Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known.

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Ingestion	May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.
Skin contact	Redness. Irritating to skin.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. This product is toxic.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Lastik veya PVC eldiven , Koruyucu gözlük / maske ,Lastik bot ,Asit / kimyasal dayanıklı tulum kullanılmalıdır. No action shall be taken without appropriate training or involving any personal risk. Cilt ve göz ile temasından kaçınılmalı, buharları solunmamalı, çalışma alanı havalandırılmalıdır.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Buharlarını azaltmak için su spreyi uygulayın. Toprak ve yüzey sularının kirlenmesini önlemek için izole edin.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Dökülen alan kum, toprak gibi inert maddelerle absorbe edilerek özel bidonlara alınmalı, alan iyice havalandırılmalıdır. Small Spillages: Collect spillage. Large Spillages: Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

FERRIC CHLORIDE

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Göz ve cilt temasından kaçınılmalı, çalışma ortamı iyi havalandırılmalıdır. Keep container tightly sealed when not in use. Avoid the formation of mists. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Keep only in the original container. Kapalı depolama alanları kuru ve serin olmalı, iyi havalandırılmalıdır. Dolu kaplar kapalı olmalı ve dik konumda tutulmalıdır. Protect containers from damage. Poliester, polipropilen, polietilen, PVC gibi plastik veya ebonit kaplı çelik tanklarda depolanabilir, taşınabilir.

Storage class

Toxic storage.

Shelf life

2 years

Tank (Ürün) Sıcaklığı :

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

TLV: (soluble iron salts, as Fe) 1 mg/m³; (ACGIH 2004).

Çözünebilir demir tuzlarının aerosollerine veya dumanlarına maruz kalmaya bağlı solunum ve cilt tahrişi oluşma ihtimalini en aza indiren TLV tavsiye edilir.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Personal protection

Direct contact with the skin or eyes should be avoided as this may cause severe burns.
Avoid inhalation of vapors.
Use only in well ventilated areas.
Remove contaminated clothing immediately.
Hands should be washed at the end of work and at work.
Do not eat or drink any food when using this substance.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. Ürünün kullanımı sırasında TS/EN 166'ya uygun güvenlik gözlüğü, tam yüz siperi takılmalıdır. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. TS / EN 374'e uygun, PVC eldiven giyilerek elle teması önlenmelidir. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact. Vücudu tümüyle örten uygun koruyucu örneğin PVC kaplamalı kıyafet, aside dayanıklı tulum, kauçuk ya da lastik bot giyilmelidir.

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Hygiene measures	Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Çevrenin korunmasına yönelik mevcut mevzuat çerçevesindeki yükümlülükler bütünüyle yerine getirilmelidir.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear dark brown liquid
Odour	Acid odor.
pH	<2,0
Melting point	-12°C
Initial boiling point and range	120 °C
Flash point	160°C
Flammability (solid, gas)	Not applicable.
Vapour pressure	40 mm Hg @ 35°C
Bulk density	1,43 ± 0,13 kg/m ³
Solubility(ies)	Soluble in water.
Partition coefficient	Not known.
Explosive properties	Not considered to be explosive.
Oxidising properties	Not applicable.
Particle characteristic	

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No potentially hazardous reactions known.
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10.4. Conditions to avoid

Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
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10.5. Incompatible materials

Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
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10.6. Hazardous decomposition products

FERRIC CHLORIDE

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg) 1,190.47

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity

None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

No specific symptoms known.

Ingestion

May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

Skin contact

Redness. Irritating to skin.

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Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.

AçıklamalarExplanations

11.2 Information on other hazards

Information on other hazards

Toxicological information on ingredients.

Ferric Chloride

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity

IARC carcinogenicity None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

FERRIC CHLORIDE

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known.
Ingestion	May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.
Skin contact	Redness. Irritating to skin.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.

SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

Ferric Chloride

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 75,6 mg/l, Freshwater fish

Acute toxicity - aquatic invertebrates EC₅₀, 96 hours: 9,6 mg/l, Daphnia magna

Acute toxicity - microorganisms , 30 days: 1421,3 mg/l, Algs

Ecological information on ingredients.

Ferric Chloride

Toxicity Based on available data the classification criteria are not met.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 75,6 mg/l, Freshwater fish

Acute toxicity - aquatic invertebrates EC₅₀, 96 hours: 9,6 mg/l, Daphnia magna

Acute toxicity - microorganisms , 30 days: 1421,3 mg/l, Algs

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients.

Ferric Chloride

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not known.

FERRIC CHLORIDE

Ecological information on ingredients.

Ferric Chloride

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

Ferric Chloride

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6 Endocrine disrupting properties

Endocrine disrupting properties

Ecological information on ingredients.

Ferric Chloride

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

Ferric Chloride

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

14.1. UN number

14.1 UN number or ID number

UN No. (ADR/RID) 2582

UN No. (IMDG) 2582

UN No. (ICAO) 2582

UN No. (ADN) 2582

FERRIC CHLORIDE

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	FERRIC CHLORIDE, SOLUTION
Proper shipping name (IMDG)	FERRIC CHLORIDE, SOLUTION
Proper shipping name (ICAO)	FERRIC CHLORIDE, SOLUTION
Proper shipping name (ADN)	FERRIC CHLORIDE, SOLUTION

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID subsidiary risk	8
ADR/RID classification code	C1
ADR/RID label	8
IMDG class	8
IMDG subsidiary risk	8
ICAO class/division	8
ICAO subsidiary risk	8
ADN class	8
ADN subsidiary risk	8

14.4. Packing group

IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-B
ADR transport category	3
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Maritime transport in bulk
according to IMO instruments

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
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FERRIC CHLORIDE

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Commission Regulation (EU) No 453/2010 of 20 May 2010.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information**Classification procedures according to Regulation (EC) 1272/2008**

Acute Tox. 4 - H302: Eye Dam. 1 - H318: Skin Irrit. 2 - H315: : Calculation method.

Training advice

Only trained personnel should use this material.

Issued by

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Chemical Assessment Specialist Certificate Date & Number : 14.12.2019 / KDU01.11.02

Revision date

30/12/2023

Revision

10.0

Supersedes date

30/06/2016

SDS number

DD.44.19

Hazard statements in full

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.