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

1.1 Product identifier
Trade Name: Ferro Reagent R1
Article n°: 3060XXX
MS: 80115310256

1.2 Relevant identified uses of the substance or mixture and uses advised against
Reagent for *in-vitro* diagnostics in human samples
For professional use only.

1.3 Manufacturer
Kovalent do Brasil Ltda.
Rua Cristóvão Sardinha, 110 – Jd. Bom Retiro – São Gonçalo – RJ – Brasil.
Tel: +(55 21) 2623-1367
e-mail: kovalent@kovalent.com.br

1.4 Emergency telephone number
Tel: +(55 21) 2623-1367 – Costumer Service from 8am to 5pm
0800 015 1414

In case of emergency – 24 hours service
0800-722-6001 – RENACIAT (Rede Nacional de Centros de Informação e Assistência Toxicológica)

2 Hazards Identification

2.1 Classification of the substance or mixture
Classification according to ABNT NBR 14725
H315 Causes skin irritation.
H318 Causes serious eye damage.

2.2 Label elements
Labelling (GHS)

Signal word:	Danger	
Hazard statements:	H315	Causes skin irritation.
	H318	Causes serious eye irritation.
Precautionary statements:	P264	Wash hands and face thoroughly after handling.
	P280	Wear protective gloves/protective clothing/eye protection.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER/doctor.
Text for labelling:	Contains Dodecan-1-ol, ethoxylated and Alcohols, C9-11-iso-, C10-rich, ethoxylated.	

2.3 Other hazards
No risks worthy of mention.
Endocrine disrupting properties, Results of PBT and vPvB assessment: No data available

3 Composition/information on ingredients

3.1 Substances
Not applicable

3.2 Mixtures
Chemical characterization: Aqueous solution of inorganic salts and organic compounds.

Hazardous ingredients:

Ingredient	Designation	Content	Classification
EC No. 200-469-3 CAS 60-32-2	Aminocaproic acid	< 10 %	Skin Irrit. 2; H315. Eye Irrit. 2; H319. STOT SE 3; H335.
EC No. 200-580-7 CAS 64-19-7	Acetic acid	1 - 5 %	Flam. Liq. 3; H226. Skin Corr. 1A; H314. Specific concentration limits (SCL): Skin Corr. 1A; H314: C ≥ 90 % / Skin Corr. 1B; H314: 25 % ≤ C < 90 % / Skin Irrit. 2; H315: 10 % ≤ C < 25 % / Eye Irrit. 2; H319: 10 % ≤ C < 25 %
EC No. 500-002-6 CAS 9002-92-0	Dodecan-1-ol, ethoxylated	1 - 5 %	Acute Tox. 4; H302. Eye Dam. 1; H318. Aquatic Chronic 3; H412.
list no. 616-607-4 CAS 78330-20-8	Alcohols, C9-11-iso-, C10-rich, ethoxylated	1 - 5 %	Eye Dam. 1; H318.
EC No. 200-543-5 CAS 62-56-6	Thiourea	< 1 %	Acute Tox. 4; H302. Carc. 2; H351. Repr. 2; H361d. Aquatic Chronic 2; H411.

Full text of H- and EUH-statements: see section 16.

4 First aid measures

4.1 Description of first aid measures

General information: First aider: Pay attention to self-protection!
If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation: Move victim to fresh air. Seek medical treatment in case of troubles.

Following skin contact: Remove residues with water. In case of skin irritation, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Immediately get medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
Causes serious eye irritation. Causes skin irritation.

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

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media: Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

5.2 Special hazards arising from the substance or mixture
Fires in the immediate vicinity may cause the development of dangerous vapours.
In case of fire may be liberated: Nitrogen oxides (NOx), sulphur oxides, carbon monoxide andcarbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters: Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Do not allow fire water to penetrate into surface or ground water.

6 Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Avoid contact with skin, eyes, and clothing. Workplace should be equipped with a shower and an eye rinsing apparatus. Wear appropriate protective equipment.
In enclosed areas: Provide fresh air. Do not breathe vapours. Take off contaminated clothing and wash it before reuse.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.
Store in special closed containers and dispose of according to ordinance. Wash spill area with plenty of water. Final cleaning.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

7 Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe vapours. Avoid contact with skin, eyes, and clothing.
Keep all containers, equipment and working place clean. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Workplace should be equipped with a shower and an eye rinsing apparatus.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep containers tightly closed and at a temperature between 2 °C and 8 °C.
Protect against heat /sun rays. Do not freeze. Keep sterile.

Hints on joint storage: Do not store together with: strong oxidizing agents, alkalis.
Keep away from food, drink and animal feeding stuffs.

Storage Class: Non-combustible liquids.

7.3 Specific end use(s)

No information available.

8 Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
64-19-7	Acetic acid	Europe: IOELV: STEL	50 mg/m³; 20 ppm
		Europe: IOELV: TWA	25 mg/m³; 10 ppm
		Germany: TRGS 900 Kurzzeit	50 mg/m³; 20 ppm
		Germany: TRGS 900 Langzeit	25 mg/m³; 10 ppm

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment
Occupational exposure controls

Respiratory protection:	Respiratory protection must be worn whenever the WEL levels have been exceeded. Use combination filter type A/P according to EN 14387.
Hand protection:	Protective gloves according to EN 374.
Glove material:	Nitrile rubber. Breakthrough time: >480 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Eye protection:	Tightly sealed goggles according to EN 166.
Body protection:	Wear suitable protective clothing.

General protection and hygiene measures:
Do not breathe vapours. Avoid contact with skin, eyes, and clothing. Take off contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Workplace should be equipped with a shower and an eye rinsing apparatus.

Environmental exposure controls
Refer to "6.2 Environmental precautions".

9 Physical and chemical properties

Physical state at 20 °C and 101.3 kPa:	liquid
Colour:	colourless, clear
Odour:	like acetic acid
Odour threshold:	No data available
pH:	at 25 °C: 4.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	not combustible
Evaporation rate:	No data available
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Density:	at 20 °C: 1.049 g/mL
Water solubility:	completely miscible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Particle characteristics:	Not applicable
Auto-ignition temperature:	No data available
Explosive properties:	No data available
Oxidizing characteristics:	No data available
Additional information:	No data available

10 Stability and reactivity

10.1 Reactivity
Refer to 10.3

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid
Protect from frost, heat and sunlight.

10.5 Incompatible materials
Strong oxidizing agents, alkalis

10.6 Hazardous decomposition products
No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: No data available

11 Toxicological information

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral):	Based on available data, the classification criteria are not met.
Acute toxicity (dermal):	Lack of data.
Acute toxicity (inhalative):	Lack of data.
Skin corrosion/irritation:	Skin Irrit. 2; H315 = Causes skin irritation.
Serious eye damage/irritation:	Eye Dam. 1; H318 = Causes serious eye damage.
Sensitisation to the respiratory tract:	Lack of data.
Skin sensitisation:	Lack of data.
Germ cell mutagenicity/Genotoxicity:	Lack of data.
Carcinogenicity:	Lack of data.
Reproductive toxicity:	Lack of data.
Effects on or via lactation:	Lack of data.
Specific target organ toxicity (single exposure):	Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure):	Lack of data.
Aspiration hazard:	Lack of data.
Endocrine disrupting properties:	No data available
Symptoms:	In case of ingestion: May cause irritations. The following symptoms may occur: Nausea, vomiting, diarrhoea, gastrointestinal complaints.

12 Ecological information

12.1 Toxicity
Aquatic toxicity: Information about Thiourea:
Toxic to aquatic life with long lasting effects.
Water hazard class: 3 - Highly hazardous to water

12.2 Persistence and degradability
Further details: No data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: No data available

12.4 Mobility in soil
No data available

12.5 Other adverse effects
General information: Do not allow to enter into groundwater, surface water or drains.

13 Disposal considerations

13.1 Waste treatment methods
Product: Special waste. Dispose of waste according to applicable legislation.

Package: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

Additional information: Do not reuse empty containers.

14 Transport information

14.1 UN number
ADR/RID, IMDG, IATA, ANTT: Not applicable

14.2 UN proper shipping name
ADR/RID, IMDG, IATA, ANTT: Not restricted

14.3 Transport hazard class(es)
ADR/RID: Not applicable
IMDG: Not applicable
IATA: Not applicable
ANTT: Not applicable

14.4 Risk Number
–

14.5 Packing group
ADR/RID, IMDG, IATA, ANTT: Not applicable

14.6 Environmental hazards
Dangerous for the environment: Substance/mixture is not environmentally hazardous according to regulations.
Marine pollutant: No

14.7 Special precautions for user
No dangerous good in sense of these transport regulations.

15 Regulatory information

- Product produced in accordance with the requirements established by RDC 665 of 30/03/2022 and with labeling information in accordance with RDC 206 of 17/11/2006.

- For more details on product disposal refer to RDC 222 of 28/03/2018 and NBR 10004.

- This safety data sheet was prepared in accordance with ABNT/NBR 14725:23.

16 Other information

The above information is considered correct but is not intended to be complete and should be used only as a guide. Kovalent is not responsible for any damage resulting from handling or use.

In article XXX: The three X are for the volume.

Wording of the H-phrases under paragraph 2 and 3:
H226 = Flammable liquid and vapour.
H302 = Harmful if swallowed.
H314 = Causes severe skin burns and eye damage.
H315 = Causes skin irritation.
H318 = Causes serious eye damage.
H319 = Causes serious eye irritation.
H335 = May cause respiratory irritation.
H351 = Suspected of causing cancer.
H361d = Suspected of damaging the unborn child.
H411 = Toxic to aquatic life with long lasting effects.
H412 = Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms:
Acute Tox.: Acute toxicity
ABNT: Associação Brasileira de Normas Técnicas / National Standards Forum
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
Aquatic Chronic: Hazardous to the aquatic environment - chronic
ANTT: Agência Nacional de Transporte Terrestre / National Agency of Transportation by Road
AS/NZS: Australian Standards/New Zealand Standards
Carc.: Carcinogenicity
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
EQ: Excepted quantities
EU: European Union
Eye Dam.: Eye damage
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquid
GHS: Globally Harmonized System
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
MS: Anvisa's Registry Code
NBR: Brazilian technical ordinance
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
pH: Potential of Hydrogen
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration

RDC: Resolution from the Directory Board
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.: Skin corrosion
Skin Irrit.: Skin irritation
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
WEL: Workplace Exposure Limit

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

1.1 Product identifier
Trade Name: Ferro Reagent R2
Article n°: 3060XXX
MS: 80115310256

1.2 Relevant identified uses of the substance or mixture and uses advised against
Reagent for *in-vitro* diagnostics in human samples
For professional use only.

1.3 Manufacturer
Kovalent do Brasil Ltda.
Rua Cristóvão Sardinha, 110 – Jd. Bom Retiro – São Gonçalo – RJ – Brasil.
Tel: +(55 21) 2623-1367
e-mail: kovalent@kovalent.com.br

1.4 Emergency telephone number
Tel: +(55 21) 2623-1367 – Costumer Service from 8am to 5pm
0800 015 1414

In case of emergency – 24 hours service
0800-722-6001 – RENACIAT (Rede Nacional de Centros de Informação e Assistência Toxicológica)

2 Hazards Identification

2.1 Classification of the substance or mixture
Classification according to ABNT NBR 14725
This mixture is classified as not hazardous.

2.2 Label elements
Labelling (GHS)

Hazard statements: Not applicable

Precautionary statements: Not applicable

Special labelling H210 - Safety data sheet available on request

2.3 Other hazards
Due to its pH value (see section 9), irritation of the skin and eyes cannot be ruled out.
Endocrine disrupting properties, Results of PBT and vPvB assessment: No data available

3 Composition/information on ingredients

3.1 Substances
Not applicable

3.2 Mixtures
Chemical characterization: Aqueous solution with Ascorbic acid

Hazardous ingredients:

Ingredient	Designation	Content	Classification
EC No. 200-543-5 CAS 62-56-6	Thiourea	< 1 %	Acute Tox. 4; H302. Carc. 2; H351. Repr. 2; H361d. Aquatic Chronic 2; H411.

Full text of H- and EUH-statements: see section 16.

4 First aid measures

4.1 Description of first aid measures

In case of inhalation:	Provide fresh air. Seek medical treatment in case of troubles.
Following skin contact:	Change contaminated clothing. After contact with skin, wash immediately with plenty of water. In case of skin irritation, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed
Can cause skin, eye, and respiratory tract irritation.

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

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media:	Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

5.2 Special hazards arising from the substance or mixture
Fires in the immediate vicinity may cause the development of dangerous vapours.
In case of fire may be liberated: Sulphur oxides, nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

5.3 Advice for firefighters
Special protective equipment for firefighters:	Wear a self-contained breathing apparatus.
Additional information:	Do not allow water used to extinguish fire to enter drains, ground or waterways.

6 Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures
Avoid contact with skin, eyes, and clothing. Wear suitable protective clothing. Provide adequate ventilation.

6.2 Environmental precautions
Do not allow to penetrate into soil, waterbodies or drains.

6.3 Methods and material for containment and cleaning up
Soak up with absorbent materials such as sand, siliceus earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. Final cleaning.

6.4 Reference to other sections
Refer additionally to section 8 and 13.

7 Handling and storage

7.1 Precautions for safe handling
Advices on safe handling:	Provide adequate ventilation, and local exhaust as needed. Do not breathe vapours. Avoid contact with skin, eyes, and clothing. Keep all containers, equipment and working place clean. Wear appropriate protective equipment. Change contaminated clothing. Have eye wash bottle or eye rinse ready at workplace.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storerooms and containers:
Keep containers tightly closed and at a temperature between 2 °C and 8 °C. Protect against heat /sun rays. Keep sterile. Do not freeze.
Unsuitable materials: Aluminium, copper, copper alloys, zinc.

Hints on joint storage: Do not store together with strong acids or alkalis.
Storage Class: 12 = Non-combustible liquids.

7.3 Specific end use(s)
No information available.

8 Exposure controls/personal protection

8.1 Control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment
Occupational exposure controls
Respiratory protection: If vapours form, use respiratory protection.

Hand protection: Protective gloves according to EN 374.

Glove material: Nitrile rubber. Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:
Avoid contact with skin, eyes, and clothing. Change contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink. Have eye wash bottle or eye rinse ready at workplace.

Environmental exposure controls
Refer to "6.2 Environmental precautions".

9 Physical and chemical properties

Physical state at 20 °C and 101.3 kPa:	liquid
Colour:	yellow
Odour:	like sulfur
Odour threshold:	No data available
pH:	at 25 °C: 2.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	not combustible
Evaporation rate:	No data available
Flammability:	No data available

Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Density:	at 20 °C: 1.022 g/mL
Water solubility:	at 20 °C: completely miscible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Particle characteristics:	Not applicable
Oxidizing characteristics:	No data available
Additional information:	No data available

10 Stability and reactivity

10.1 Reactivity
Refer to 10.3

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid
Protect from frost, heat and sunlight.

10.5 Incompatible materials
Strong acids, alkalis, aluminium, copper, copper alloys, zinc

10.6 Hazardous decomposition products
No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: No data available

11 Toxicological information

Acute toxicity (oral):	Based on available data, the classification criteria are not met.
Acute toxicity (dermal):	Lack of data.
Acute toxicity (inhalative):	Lack of data.
Skin corrosion/irritation:	Lack of data.
Serious eye damage/irritation:	Lack of data.
Sensitisation to the respiratory tract:	Lack of data.
Skin sensitisation:	Lack of data.
Germ cell mutagenicity/Genotoxicity:	Lack of data.
Carcinogenicity:	Lack of data.
Reproductive toxicity:	Lack of data.
Effects on or via lactation:	Lack of data.
Specific target organ toxicity (single exposure):	Lack of data.
Specific target organ toxicity (repeated exposure):	Lack of data.
Aspiration hazard:	Lack of data.

Endocrine disrupting properties: No data available

Symptoms: Can cause skin, eye and respiratory tract irritation.

12 Ecological information

12.1 Toxicity
Aquatic toxicity: In case of spills of large quantities: Harmful effects on water organisms by modification of pH-value.
Water hazard class: 3 - Highly hazardous to water.

12.2 Persistence and degradability
Further details: No data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: No data available

12.4 Mobility in soil
No data available

12.5 Other adverse effects
General information: Do not allow to enter into groundwater, surface water or drains.

13 Disposal considerations

13.1 Waste treatment methods
Product: Special waste. Dispose of waste according to applicable legislation.

Package: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

Additional information: Do not reuse empty containers.

14 Transport information

14.1 UN number
ADR/RID, IMDG, IATA, ANTT: Not applicable

14.2 UN proper shipping name
ADR/RID, IMDG, IATA, ANTT: Not restricted

14.3 Transport hazard class(es)
ADR/RID: Not applicable
IMDG: Not applicable
IATA: Not applicable
ANTT: Not applicable

14.4 Risk Number
–

14.5 Packing group
ADR/RID, IMDG, IATA, ANTT: Not applicable

14.6 Environmental hazards
Dangerous for the environment: Substance/mixture is not environmentally hazardous according to regulations
Marine pollutant: No

14.7 Special precautions for user
No dangerous good in sense of these transport regulations.

15 Regulatory information

• Product produced in accordance with the requirements established by RDC 665 of 30/03/2022 and with labeling information in accordance with RDC 206 of 17/11/2006.

• For more details on product disposal refer to RDC 222 of 28/03/2018 and NBR 10004.

• This safety data sheet was prepared in accordance with ABNT/NBR 14725:23.

16 Other information

The above information is considered correct but is not intended to be complete and should be used only as a guide. Kovalent is not responsible for any damage resulting from handling or use.

In article XXX: The three X are for the volume.

Wording of the H-phrases under paragraph 2 and 3:
H302 = Harmful if swallowed.
H351 = Suspected of causing cancer.
H361d = Suspected of damaging the unborn child.
H411 = Toxic to aquatic life with long lasting effects.
H210 = Safety data sheet available on request.

Abbreviations and acronyms:
ABNT: Associação Brasileira de Normas Técnicas / National Standards Forum
Acute Tox.: Acute toxicity
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ANTT: Agência Nacional de Transporte Terrestre / National Agency of Transportation by Road
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Carc.: Carcinogenicity
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level EC: European Community
EN: European Standard
EQ: Excepted quantities
EU: European Union
GHS: Globally Harmonized System
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
MS: Anvisa's Registry Code
NBR: Brazilian technical ordinance
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
pH: Potential of Hydrogen
PNEC: Predicted no-effect concentration
RDC: Resolution from the Directory Board
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
TRGS: Technical Rules for Hazardous Substances
UN: United Nations

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

1.1 Product identifier
Trade Name: Ferro Standard
Article n°: 3060XXX
MS: 80115310256

1.2 Relevant identified uses of the substance or mixture and uses advised against
Reagent for *in-vitro* diagnostics in human samples
For professional use only.

1.3 Manufacturer
Kovalent do Brasil Ltda.
Rua Cristóvão Sardinha, 110 – Jd. Bom Retiro – São Gonçalo – RJ – Brasil.
Tel: +(55 21) 2623-1367
e-mail: kovalent@kovalent.com.br

1.4 Emergency telephone number
Tel: +(55 21) 2623-1367 – Costumer Service from 8am to 5pm
0800 015 1414

In case of emergency – 24 hours service
0800-722-6001 – RENACIAT (Rede Nacional de Centros de Informação e Assistência Toxicológica)

2 Hazards Identification

2.1 Classification of the substance or mixture
Classification according to ABNT NBR 14725
H290 May be corrosive to metals.

2.2 Label elements
Labelling (GHS)

Signal word:	Warning	
Hazard statements:	H290	May be corrosive to metals
Precautionary statements:	P234	Keep only in original packaging.
	P280	Wear protective gloves/protective clothing/eye protection.
	P390	Absorb spillage to prevent material damage

2.3 Other hazards
A corrosive effect cannot be ruled out because of the pH value.
Endocrine disrupting properties, Results of PBT and vPvB assessment: No data available.

3 Composition/information on ingredients

3.1 Substances
Not applicable

3.2 Mixtures
Chemical characterization: Aqueous solution.

Hazardous ingredients:

Ingredient	Designation	Content	Classification
EC No. 231-595-7 CAS 7647-01-0	Hydrochloric acid	< 1 %	Met. Corr. 1; H290. Skin Corr. 1B; H314. STOT SE 3; H335. Specific concentration limits (SCL): Skin Corr. 1B; H314: C ≥ 25 % / Skin Irrit. 2; H315: 10 % ≤ C < 25 % / Eye Irrit. 2; H319: 10 % ≤ C < 25 % / STOT SE 3; H335: C ≥ 10 %

Full text of H- and EUH-statements: see section 16.

4 First aid measures

4.1 Description of first aid measures

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing. Seek medical aid in case of troubles.

Following skin contact: Take off immediately all contaminated clothing.
After contact with skin, wash immediately with plenty of water.
In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.
Subsequently consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.
Do not induce vomiting. Do not try to neutralize. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Due to its pH value (see section 9), irritation of the skin and eyes cannot be ruled out.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

5.2 Special hazards arising from the substance or mixture

Fires in the immediate vicinity may cause the development of dangerous vapours.
In case of fire may be liberated: Hydrogen chloride.

5.3 Advice for firefighters

Special protective equipment for firefighters: In case of surrounding fires: Wear self-contained breathing apparatus.

Additional information: Do not allow fire water to penetrate into surface or ground water.

6 Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Avoid contact with skin and eyes. Take off contaminated clothing and wash it before reuse.
Wear appropriate protective equipment.
Provide adequate ventilation.

6.2 Environmental precautions

Do not allow to enter into groundwater, surface water or drains.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.
Store in special closed containers and dispose of according to ordinance. Wash spill area with plenty of water.

6.4 Reference to other sections
Refer additionally to section 8 and 13.

7 Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Avoid contact with skin and eyes. Take off contaminated clothing and wash it before reuse.
Wear appropriate protective equipment.
Keep all containers, equipment and working place clean.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep containers tightly closed and at a temperature between 2 °C and 8 °C. Protect from light.
Keep sterile.
Unsuitable materials: Metals

Hints on joint storage: Do not store together with acids/alkalies and oxidation agents.
Storage class: 8B = Non-combustible corrosive substances

7.3 Specific end use(s)
No information available.

8 Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
7647-01-0	Hydrochloric acid	Europe: IOELV: STEL	15 mg/m³; 10 ppm (Hydrogen chloride)
		Europe: IOELV: TWA	8 mg/m³; 5 ppm (Hydrogen chloride)
		Germany: TRGS 900 Kurzzeit	6 mg/m³; 4 ppm (Hydrogen chloride)
		Germany: TRGS 900 Langzeit	3 mg/m³; 2 ppm (Hydrogen chloride)

8.2 Exposure controls
Provide adequate ventilation, and local exhaust as needed.

Personal protection equipment
Occupational exposure controls

Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded. Use filter type (E-P2) according to EN 14387.

Hand protection: Protective gloves according to EN 374.

Glove material: Nitrile rubber. Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Lab coat.

General protection and hygiene measures:
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.
Provide a conveniently located eye rinse station.

Environmental exposure controls
Refer to "6.2 Environmental precautions".

9 Physical and chemical properties

Physical state at 20 °C and 101.3 kPa:	liquid
Colour:	colourless, clear
Odour:	no characteristic odour
Odour threshold:	No data available
pH:	at 25 °C: 1.2
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	not combustible
Evaporation rate:	No data available
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Density:	at 20 °C: 1.000 g/mL
Water solubility:	at 20 °C: completely miscible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Particle characteristics:	Not applicable
Oxidizing characteristics:	No data available
Additional information:	No data available

10 Stability and reactivity

10.1 Reactivity
May be corrosive to metals.

10.2 Chemical stability
Product is stable under normal storage conditions.

10.3 Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid
Protect against heat / sun rays.

10.5 Incompatible materials
Strong acids and alkalis, Metals (Formation of hydrogen).

10.6 Hazardous decomposition products
No decomposition when used properly.

Thermal decomposition: No data available

11 Toxicological information

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral):	Lack of data.
Acute toxicity (dermal):	Lack of data.
Acute toxicity (inhalative):	Lack of data.
Skin corrosion/irritation:	Based on available data, the classification criteria are not met.
Serious eye damage/irritation:	Based on available data, the classification criteria are not met.
Sensitisation to the respiratory tract:	Lack of data.
Skin sensitisation:	Lack of data.
Germ cell mutagenicity/Genotoxicity:	Lack of data.
Carcinogenicity:	Lack of data.
Reproductive toxicity:	Lack of data.
Effects on or via lactation:	Lack of data.
Specific target organ toxicity (single exposure):	Lack of data.
Specific target organ toxicity (repeated exposure):	Lack of data.
Aspiration hazard:	Lack of data.
Endocrine disrupting properties:	No data available
Symptoms:	Due to its pH value (see section 9), irritation of the skin and eyes cannot be ruled out.

12 Ecological information

12.1 Toxicity
Aquatic toxicity: Harmful effects on water organisms by modification of pH-value.
Water hazard class: 1 - Slightly hazardous to water.

12.2 Persistence and degradability
Further details: No data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: No data available

12.4 Mobility in soil
No data available

12.5 Other adverse effects
General information: Do not allow to enter into groundwater, surface water or drains.

13 Disposal considerations

13.1 Waste treatment methods
Product: Special waste. Dispose of waste according to applicable legislation.

Package: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

Additional information: Do not reuse empty containers.

14 Transport information

14.1 UN number
ADR/RID, IMDG, IATA, ANTT: UN 3264

14.2 UN proper shipping name
ADR/RID, IMDG, IATA, ANTT: UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid mixture)

14.3 Transport hazard class(es)

ADR/RID: Class 8, Code: C1
IMDG: Class 8, Subrisk -
IATA: Class 8
ANTT: Class 8

14.4 Risk Number
–

14.5 Packing group
ADR/RID, IMDG, IATA, ANTT: III

14.6 Environmental hazards
Dangerous for the environment: Substance/mixture is not environmentally hazardous according to regulations
Marine pollutant: No

14.7 Special precautions for user
Land transport (ADR/RID)
Warning board: ADR/RID: Kemmler-number 80, UN number UN 3264
Hazard label: 8
Special Provisions: 274
Limited quantities: 5L
EQ: E1
Package - Instructions: P001 IBC03 LP01 R001
Special provisions for packing together: MP19
Portable tanks - Instructions: T7
Portable tanks - Special Provisions: TP1 TP28
Tank coding: L4BN
Tunnel restriction code: E

Inland waterway craft (ADN)
Hazard label: 8
Special Provisions: 274
Limited quantities: 5L
EQ: E1
Transport permitted: T
Equipment necessary: PP - EP

Sea transport (IMDG)
EmS: F-A, S-B
Special Provisions: 223 274
Limited quantities: 5L
Excepted quantities: E1
Package - Instructions: P001, LP01
Package - Provisions: -
IBC - Instructions: IBC03
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T7
Tank instructions - Provisions: TP1, TP28
Stowage and handling: Category A. SW2
Segregation: SG36 SG49
Properties and observations: Causes burns to skin, eyes and mucous membranes.
Segregation group: 1

Air transport (IATA)

Hazard label:	Corrosive
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y841 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 852 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 856 - Max. Net Qty/Pkg. 60 L
Special Provisions:	A3 A803
Emergency Response Guide-Code (ERG):	8L

15 Regulatory information

• Product produced in accordance with the requirements established by RDC 665 of 30/03/2022 and with labeling information in accordance with RDC 206 of 17/11/2006.

• For more details on product disposal refer to RDC 222 of 28/03/2018 and NBR 10004.

• This safety data sheet was prepared in accordance with ABNT/NBR 14725:23.

16 Other information

The above information is considered correct but is not intended to be complete and should be used only as a guide. Kovalent is not responsible for any damage resulting from handling or use.

In article XXX: The three X are for the volume.

Wording of the H-phrases under paragraph 2 and 3:
H290 = May be corrosive to metals.
H314 = Causes severe skin burns and eye damage.
H335 = May cause respiratory irritation.

Abbreviations and acronyms:
ABNT: Associação Brasileira de Normas Técnicas / National Standards Forum
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ANTT: Agência Nacional de Transporte Terrestre / National Agency of Transportation by Road
AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
EQ: Excepted quantities
EU: European Union
GHS: Globally Harmonized System
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
Met. Corr.: Corrosive to metals
MS: Anvisa's Registry Code
NBR: Brazilian technical ordinance
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
pH: Potential of Hydrogen
PNEC: Predicted no-effect concentration
RDC: Resolution from the Directory Board
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.: Skin corrosion

STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
WEL: Workplace Exposure Limit