

Safety Data Sheet according to Regulation (EC) No 1907/2006

Castolin Eutectic GmbH

Revision No: 2024,0

SDS 00005

EutecTrode 640

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

1.1. Product identifier

EutecTrode 640

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

Use of the substance/mixture

Welding rod, welding wire

1.3. Details of the supplier of the safety data sheet

Manufacturer

| | | |
|---------------|---|--|
| Company name: | Castolin Ireland Ltd. 36 Magna Avenue, Magna Business Park Citywest IRL-24 Dublin | Castolin Eutectic GmbH Gutenbergstrasse 10 D-65830 Kriftel |
| Telephone: | +353 (0) 145 158 33 | +49 (0) 6192 403 0 |
| Telefax: | +353 (0) 145 151 97 | +49 (0) 6192 403 314 |

Responsible for the safety data sheet: sds@gbk-ingelheim.de

1.4. Emergency telephone number:

Public Poisons Information Line: +353 (0) 1 809 2166 (8am-10pm 7 days a week)

Emergency telephone :+49 (0) 6132 / 84463 (GBK GmbH, Ingelheim)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Sens. 1; H317

Carc. 2; H351

STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

Brazing/welding vapours and fumes from brazing/welding may cause metal fumes fever. Symptoms can appear 4 to 12 hours after. (headache, dizziness, dryness, cough, nausea and fever)

May cause irritation by prolonged inhalation of brazing/welding fumes.

Welding fumes (not otherwise specified) are considered to be carcinogenic with no further categorization by NIOSH (National Institute for Occupational Safety and Health) and IARC (International Agency for the Research on Cancer).

IARC - International Agency for Research on Cancer

NIOSH - National Institute for Occupational Safety and Health

2.2. Label elements

Regulation (EC) No 1272/2008

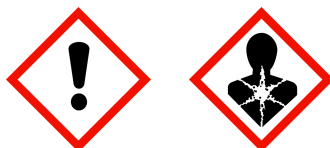
Hazard components for labelling

nickel

Signal word:

Warning

Pictograms:



Hazard statements

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

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

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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- P314 Get medical advice/attention if you feel unwell.
- P285 In case of inadequate ventilation wear respiratory protection.
- P501 Dispose of contents/container to hazardous or special waste collection point .

Additional advice on labelling

As an article the product does not need to be labelled in accordance with EC-regulations or respective national laws.

Although this product does not require a hazard warning label, we recommend that the safety advice should be observed.

Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex (Annex I GHS), if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex.

Instead, the supplier shall provide the information to downstream users or distributors by means of the SDS.

2.3. Other hazards

Welding and brazing processes can cause spatter, melting metal and UV/IR heat can cause burns or start fires.

IARC and NIOSH are of the following opinion: During welding- and brazing processes formed metallic fumes are suspected of being cancer causing agents.

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Base metals and alloys

Hazardous components

| CAS No | Chemical name | EC No | Index No | REACH No | Quantity |
|-----------|---------------|--|--------------|------------------|----------|
| | | Classification (Regulation (EC) No 1272/2008) | | | |
| 7440-47-3 | Chromium | | | | 10-50 % |
| | | 231-157-5 | | 01-2119485652-31 | |
| 7440-02-0 | nickel | | | | 5-10 % |
| | | 231-111-4 | 028-002-00-7 | 01-2119438727-29 | |
| | | Carc. 2, Skin Sens. 1, STOT RE 1; H351 H317 H372 | | | |
| 7439-96-5 | Manganese | | | | 0,1-5 % |
| | | 231-105-1 | | 01-2119449803-34 | |

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

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|-----------|-----------|--|----------|
| | | Specific Conc. Limits, M-factors and ATE | |
| 7440-02-0 | 231-111-4 | nickel | 5-10 % |
| | | oral: LD50 = > 9000 mg/kg | |
| 7439-96-5 | 231-105-1 | Manganese | 0,1-5 % |
| | | inhalation: LC50 = > 5,14 mg/l (dusts or mists); oral: LD50 = > 2000 mg/kg | |

SECTION 4: First aid measures

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4.1. Description of first aid measures

After inhalation

Take affected person into fresh air.
Consult a physician if necessary.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes.
In the event of persistent symptoms receive medical treatment.

After contact with eyes

Rinse thoroughly with plenty of water, also under the eyelids.
In the event of persistent symptoms receive medical treatment.

After ingestion

Rinse mouth.
Consult a physician.

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

No data available

Hazard statements

H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

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

Treat symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use fire fighting measures that suit the environment and products stored.

5.2. Special hazards arising from the substance or mixture

In case of fire formation of dangerous gases possible.

5.3. Advice for firefighters

In case of fire, wear suitable respiratory equipment with positive air supply.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Breathing apparatus (particle filter) only if dust is formed.

For non-emergency personnel

Avoid contact with skin, eyes and clothing.

For emergency responders

Use personal protective clothing.
Remove persons to safety.

6.2. Environmental precautions

Do not discharge into the drains or bodies of water.

6.3. Methods and material for containment and cleaning up

For cleaning up

Take up mechanically and collect in suitable container for disposal.

Other information

Take up mechanically and collect in suitable container for disposal.

6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).
Informations for disposal look up chapter 13.

SECTION 7: Handling and storage

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7.1. Precautions for safe handling

Advice on safe handling

Keep container tightly closed.
Avoid contact with skin, eyes and clothing.
Use only in well-ventilated areas.
ANSI Z49.1 Safety in Welding, Cutting and allied processes.

Advice on general occupational hygiene

At work do not eat, drink and smoke.
Wash hands and skin before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a dry place.

Hints on joint storage

Incompatible with strong acids and oxidizing agents.

7.3. Specific end use(s)

Welding rod, welding wire

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

| CAS No | Substance | ppm | mg/m ³ | fib/cm ³ | Category | Origin |
|------------|---|-----|-------------------|---------------------|-----------|--------|
| - | Chromium (VI) compounds (as Cr) Insoluble | - | 0.01 | | TWA (8 h) | |
| 7440-47-3 | Chromium metal | - | 2 | | TWA (8 h) | |
| 7440-50-8 | Copper, fume | - | 0.2 | | TWA (8 h) | |
| 7439-96-5 | Manganese (Respirable Fraction) | - | 0.05 | | TWA (8 h) | |
| 7440-02-0 | Nickel | - | 0.5 | | TWA (8 h) | |
| 13463-67-7 | Titanium dioxide, total inhalable dust | - | 10 | | TWA (8 h) | |

Biological limit values

| CAS No | Substance | Parameter | Value | Test material | Sampling time |
|-----------|-----------|----------------|---------|---------------|--|
| 7440-47-3 | Chromium | Total chromium | 25 µg/L | Urine | End of shift at end of workweek |
| 7440-02-0 | Nickel | Ni | 3 µg/L | Urine | After several consecutive working shifts |

Additional advice on limit values

Designations with OLD are no longer legally valid. These are MAC values that were deleted from TRGS 900. These values were retained as additional information for a risk assessment.

8.2. Exposure controls

Appropriate engineering controls

Provide appropriate exhaust ventilation at machinery and at places where dust or smoke can be generated.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use approved tinted welding goggles during welding
Safety goggles with side protection (EN 166).

Hand protection

Use protective gloves for welders (DIN 4841-4).
Use inner-gloves to prevent from allergic reactions due to direct skin contact.
Protective gloves resistant to chemicals made off polychloropren, Minimum coat thickness 0.6 mm, Permeation resistance (wear duration) approx. 480 minutes, i.e. protective glove <Camapren 722> made by www.kcl.de.
Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the

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recommendations given by the manufacturer of protective gloves.

This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.

Skin protection

Dust resistant protective clothing.

Respiratory protection

Use suitable breathing apparatus if there is inadequate ventilation. Multi-purpose filter ABEK/P3

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | | |
|---|-------------------|-------------------|
| Physical state: | Solid | |
| Colour: | No data available | |
| Odour: | Odourless | |
| Melting point/freezing point: | | No data available |
| Boiling point or initial boiling point and boiling range: | | n.a. |
| Lower explosion limits: | | n.a. |
| Upper explosion limits: | | n.a. |
| Flash point: | | n.a. |
| Auto-ignition temperature: | | n.a. |
| pH-Value: | | n.a. |
| Viscosity / kinematic: | | n.a. |
| Water solubility: | | No data available |
| Partition coefficient n-octanol/water: | | n.a. |
| Vapour pressure: | | No data available |
| Density: | | No data available |
| Relative vapour density: | | n.a. |

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

n.a.

Oxidizing properties

n.a.

Other safety characteristics

Evaporation rate: n.a.

Solvent separation test: n.a.

Solvent content: n.a.

Sublimation point: No data available

Softening point: No data available

Pour point: n.a.

Viscosity / dynamic: n.a.

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

No decomposition if stored and applied as directed.

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10.5. Incompatible materials

strong acids and strong bases Strong oxidizing agents

10.6. Hazardous decomposition products

Metallic oxides

SECTION 11: Toxicological information

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

Acute toxicity

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

Brazing/welding vapours and fumes from brazing/welding may cause metal fumes fever. Symptoms can appear 4 to 12 hours after. (headache, dizziness, dryness, cough, nausea and fever)

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No | Chemical name | | | | |
|-----------|----------------------------|-------------------|---------|--------|--------|
| | Exposure route | Dose | Species | Source | Method |
| 7440-02-0 | nickel | | | | |
| | oral | LD50 > 9000 mg/kg | Ratte | | |
| 7439-96-5 | Manganese | | | | |
| | oral | LD50 > 2000 mg/kg | Ratte | | |
| | inhalation (4 h) dust/mist | LC50 > 5,14 mg/l | Ratte | | |

Irritation and corrosivity

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

May cause irritation by prolonged inhalation of brazing/welding fumes.

Sensitising effects

May cause an allergic skin reaction. (nickel)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (nickel)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

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

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (nickel)

Welding fumes (not otherwise specified) are considered to be carcinogenic with no further categorization by NIOSH (National Institute for Occupational Safety and Health) and IARC (International Agency for the Research on Cancer).

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

Further information

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

No data available

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| CAS No | Chemical name | | | | | |
|-----------|--------------------------|-----------------|-----------|---------------------------|--------|--------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 7440-02-0 | nickel | | | | | |
| | Acute fish toxicity | LC50 > 100 mg/l | 96 h | Danio rerio | | |
| | Acute algae toxicity | ErC50 100 mg/l | 72 h | Selenastrum capricornutum | | |
| | Acute crustacea toxicity | EC50 > 100 mg/l | 48 h | Daphnia magna | | |
| 7439-96-5 | Manganese | | | | | |
| | Acute fish toxicity | LC50 > 3,6 mg/l | 96 h | Oncorhynchus mykiss | | |
| | Acute algae toxicity | ErC50 4,5 mg/l | 72 h | Desmodesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 1,6 mg/l | 48 h | Daphnia magna | | |

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

No data available

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No data available

Further information

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Where possible recycling is preferred to disposal.

Dust and in exhaust systems separated particles dispose of in compliance with local regulations.

List of Wastes Code - residues/unused products

160303 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

150202 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; absorbents, filter materials, wiping cloths and protective clothing; absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150102 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); plastic packaging

SECTION 14: Transport information

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Land transport (ADR/RID)

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):
Entry 27, Entry 75

Directive 2004/42/EC on VOC in
paints and varnishes: 0 %

National regulatory information

Water hazard class (D): - - non-hazardous to water

Additional information

G39- Welding fumes.

15.2. Chemical safety assessment

For this mixture a chemical safety assessment has been carried out.

SECTION 16: Other information

Changes

Changes in chapter: 2.3

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Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
IMDG = International Maritime Code for Dangerous Goods
IATA/ICAO = International Air Transport Association / International Civil Aviation Organization
MARPOL = International Convention for the Prevention of Pollution from Ships
IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
REACH = Registration, Evaluation, Authorization and Restriction of Chemicals
CAS = Chemical Abstract Service
EN = European norm
ISO = International Organization for Standardization
DIN = Deutsche Industrie Norm
PBT = Persistent Bioaccumulative and Toxic
vPvB = Very Persistent and very Bio-accumulative
LD = Lethal dose
LC = Lethal concentration
EC = Effect concentration
IC = Median immobilisation concentration or median inhibitory concentration
Skin Sens: Skin sensitisation
Carc: Carcinogenicity
STOT RE: Specific target organ toxicity - repeated exposure

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

| Classification | Classification procedure |
|--------------------|--------------------------|
| Skin Sens. 1; H317 | Calculation method |
| Carc. 2; H351 | Calculation method |
| STOT RE 2; H373 | Calculation method |

Relevant H and EUH statements (number and full text)

H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.

Further Information

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product (s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

"(n.a. = not applicable; n.d. = not determined)"

IARC - International Agency for Research on Cancer

NIOSH - National Institute for Occupational Safety and Health

Literature:

Kraume, Zober: Arbeitssicherheit und Gesundheitsschutz in der Schweißtechnik. ("Occupational Safety and Health Protection in Welding")

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)