

1 Identification of the substance and of the company

1.1 Product identifier

1.1.1 Name of product: Alloyed steel
1.1.2 Trade name / designation: slab, hot strip, heavy plate, cold strip

1.2 Relevant identified uses of the substance and uses advised against

1.2.1 Relevant identified uses: Further processing of the steel product.
1.2.2 uses advised against: none known

1.3 Details of the supplier of the safety data sheet

1.3.1 Supplier (manufacturer): ThyssenKrupp Steel Europe AG
1.3.2 Street: Kaiser-Wilhelm-Straße 100
1.3.3 Postal code/city: D 47166 Duisburg
1.3.4 Country: Germany
1.3.5 Telephone: +49 203 / 52-1
1.3.6 Telefax: +49 203 / 52 25 10 2
1.3.7 Informing department: Occupational Safety // Hazardous Substances - Reach
Tel. +49 203 / 52 25 92 0
Fax. +49 203 / 52 26 62 8
1.3.8 E-mail (competent person): sicherheitsdatenblaetter-tks@thyssenkrupp.com
1.4 Emergency telephone number: +49 203 / 52 41 21 1 (24 h/d available)

2 * Hazards identification

2.1 Classification of the substance: The alloy (preparation) this article is made of is not classified as dangerous in the meaning of the European 1999/45/EC Directive and the Regulation (EC) No 1272/2008.

2.2 Other Hazards: During thermal or mechanical treatment (i.e. welding, detaching, grinding) dust and fume may appear and the principal risk to human health is related to the concentration of dust in the air.

3 * Composition/information on ingredients

3.1 Chemical characterisation: Alloyed steel according to EN 10020.4.3
3.2 Ingredients of steel:

EINECS Registration no.	CAS-No.	Name	Concentration [%]	Classification 67/548/EEC	Reg. (EC) No 1272/2008
231-096-4 01-2119462838-24	7439-89-6	Iron	> 95	not classified	not classified
231-105-1 01-2119449803-34	7439-96-5	Manganese	< 1	not classified	not classified

3.3 Further information: This alloy steel may contain manganese, molybdenum, chromium, silicon and other substances without labelling or substances below the concentration limit for labelling according to Regulation (EC) No 1272/2008. On customer request sheets can be oiled with corrosion protection oil.

The product fulfills the requirements according to Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

According to our current state of knowledge no substance in our products are present which fulfil the criteria according to article 57 and 59(1) of the REACH- Regulation or are listed in the candidate list according to Annex XIV. We will inform our customers immediately in case any changes occur regarding this issue.

4 First aid measures

4.1 **General information:**

First-aid measures refer to dust and fume which may result from thermal or mechanical treatment.

4.2 **In case of inhalation:**

Move affected person into fresh air. Seek medical advice if appropriate.

4.3 **In case of skin contact:**

Wash off thoroughly with soap and water.

4.4 **In case of eye contact:**

Rinse the eyes thoroughly with water with the eyelids open. Seek medical advice if an irritation persists.

4.5 **In case of ingestion:**

Rinse mouth and drink plenty of water.

5 Fire-fighting measures

5.1 **Extinguishing media:**

A massive steel product does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

5.2 **Special hazards arising from the substance or mixture:**

none

5.3 **Advice for firefighters:**

none

6 Accidental release measures

6.1 **Personal precautions:**

Steel products may have sharp edges, therefore use cut resistant gloves.

6.2 **Environmental precautions:**

No special environmental measures are necessary.

6.3 **Methods for cleaning up:**

Take up mechanically and collect material for recovery.

7 Handling and Storage

7.1 **Precaution for safe handling**

7.1.1 **Hints for safe handling:**

Steel products may have sharp edges, therefore use cut resistant gloves.

7.1.2 **Technical measures:**

In case of thermal and/or mechanical processing, local exhaust ventilation has to be used to under-run limit values described in chapter 8.1.1.

7.1.3 **General health and safety measures:**

Do not eat, drink, smoke or take snuff while working. Wash hands before breaks and on finishing work.

7.2 **Conditions for safe storage, including any incompatibilities:**

Avoid contact with acids (release of hydrogen).

8 * Exposure controls / Personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits (OELs):

CAS-No.	name	ml/m ³	mg/m ³	upper limit
	dust, alveolar fraction (A)		1.25	
	dust, respirable fraction (E)		10	2(II)
7439-96-5	Manganese (A)		0.5 E	

8.1.2 Additional hints on exposure limits:

Source (German legislation): TRGS 900 "Arbeitsplatzgrenzwerte"
Values refer to dust and fume that may result during treatment.

8.1.3 DNEL/DMEL and PNEC values:

Observe in addition the national legislative regulations!
DNEL/PNEC- values are not necessary.
DNELs for Iron General Population from iron-CSR:
Long-term systemic effects (Oral): 0.71mg/kg bw/day
Long-term - local effects (Inhalation): 1.5mg/m³

8.2 Exposure controls

8.2.1 Occupational exposure controls:

Refer to no. 7.

8.2.2 Respiratory protection:

not necessary (massive form).

8.2.3 Hand protection:

Depends on machining. If necessary use cut resistance gloves (EN 388). For example Kevlar® with liquid-repellent coating (nitrile rubber: repels oils) is suitable (cut resistance level 2 or higher is recommended).

8.2.4 Eye protection:

not necessary (massive form).

8.2.5 Suitable protective clothing:

safety shoes, working clothes.

9 Physical and chemical Properties

9.1 Information on basic physical and chemical properties

9.1.1	Physical state:	solid	
9.1.2	Colour:	metallic, silver-grey	
9.1.3	Odour:	odourless	
9.1.4	pH Value:	n.a.	
9.1.5	Melting-point / Melting range:	approx. 1530 °C (steel)	(1013 hPa)
9.1.6	Initial boiling point and boiling range:	2861°C	(1013 hPa)
9.1.7	Flash point:	n.a.	
9.1.8	Flammability:	not flammable	
9.1.9	Dust explosive properties	not explosive	
9.1.10	Vapour pressure:	n.a.	
9.1.11	Relative Density:	~ 7.80 g/cm ³	(20°C)
9.1.12	Water solubility (g/l):	steel is insoluble at 22°C.	
9.1.13	Partition coefficient n-octanol/water:	n.a.	
9.1.14	Auto-ignition temperature:	n.a. , no auto-ignition	
9.1.15	Oxidising properties:	not oxidising	
9.2	Other information:	n.a.	

Material identification:

Alloyed steel

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10 Stability and Reactivity

- 10.1 **Reactivity:** Not reactive under normal conditions.
 10.2 **Chemical Stability:** Stable under normal conditions.
 10.3 **Conditions to avoid:** No dangerous condition known.
 10.4 **Incompatible materials:** Avoid contact with acidic agents (corrosion), release of hydrogen possible.
 10.5 **Hazardous decomposition products:** none known

11 * Toxicological information

- 11.1 **General information:** All given information refer to iron which represents the main proportion (95%) of the article.
 11.2 **Acute toxicity:** There is no evidence for systemic toxicity.
oral (rat) carbonyl iron
 LD₅₀ > 7500 mg/kg (CSR)
inhalative (rat) electrolytic iron powder
 LC₅₀ (powder) (6h) > 250 mg/m³ (CSR)
 11.3 **Corrosion/irritation:** **skin** (OECD 404): not irritating (CSR)
eye (OECD 405): not irritating (CSR)
 Mechanical friction may cause irritation.
 11.4 **Sensitisation:** not sensitising
 11.5 **Repeated dose Toxicity:** **oral (rat) iron**
 LOAEL: 26mg/kg bw/day (CSR)
inhalative (rat) iron
 NOAEC: 5mg/m³ (CSR)
 11.6 **CMR effects (carcinogenicity, Mutagenicity and toxicity for reproduction):**
 11.6.1 **Carcinogenicity:** No indication of human carcinogenicity.
 11.6.2 **Mutagenicity:** No indication of human mutagenicity (negative test results for bacteria- and cell culture tests) (CSR)
 11.6.3 **Toxicity for reproduction:** n.d.a.
 11.7 **Experiences made in practice:** n.d.a.

12 * Ecological information

- 12.1 **General information:** All given information refer to iron which represents the main proportion (95%) of the article.
 12.2 **Ecotoxicity:** There is no evidence for ecotoxicological impact*.
Aquatic, fish short term (*Brachydanio rerio*)
 LLO (96h): > 1000 mg/l (iron oxide)
 *more studies can be found in CSR for iron.
 12.3 **Persistence and degradability:** not relevant for inorganic substances
 12.4 **Bioaccumulative potential:** n.a.: Iron is an essential substance, well regulated in all living organisms.
 12.5 **Mobility in Soil:** n.a.: Iron oxidises in the environment and is stabilised in the iron(III)-oxide form in the long term.
 12.6 **Results of PBT and VPvB assessment:** As iron is not bio-available, owing to its extreme insolubility in water, it is not systemically available or bioaccumulative, and hence it does not fulfil either of the PBT and vPvB criteria for classification.
 12.7 **Other adverse effects:** No negative ecological effects are expected according to the present state of knowledge.

13 Disposal considerations

- 13.1 **Waste treatment methods** Iron and steel should always be recycled.
- 13.2 **List of proposed waste codes/waste designations in accordance with EWC:** Waste classification due to trade and processing. During machining fillings or dust can be generated. For those following waste EWC-code numbers can be recommended:
120101 ferrous metal filings and turnings or
120102 ferrous metal dust and particles.
- 13.3 **Disposal packages:** n.a.

14 Transport information

- 14.1 **Land transport (ADR/RID/CDG Road/CDG Rail):** No hazardous material as defined by transport regulations.
- 14.2 **Inland waterway craft (ADN/ADNR):** No hazardous material as defined by transport regulations.
- 14.3 **Marine transport (IMO):** No hazardous material as defined by transport regulations.
- 14.4 **Air transport (ICAO/IATA):** No hazardous material as defined by transport regulations.

15 Regulatory information

- 15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- 15.1.1 **EU law:** none
- 15.1.2 **National law:** Observe in addition the national legislative regulations!
- 15.2 **Chemical Safety Assessment:** A chemical safety assessment is not necessary for this article.

16 Other information

- 16.1 **Documentation of changes:** * Data changed compared with the previous version from 28.02.2013.
- 16.2 **Further information:** abbreviations:
n.d.a. = no data available
n.a. = not applicable
DNEL = derived no effect level
PNEC = predicted no effect concentration
- 16.3 **References:** CSR: Chemical Safety Report Iron according to Regulation (EC) No 1907/2006 (REACH)

Statement:

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

The product is to be used exclusively for the applications named in the technical leaflet or in the processing instructions. The receiver of our product is singularly responsible for adhering to existing laws and regulations.