



# EC - Material Safety Data Sheet

According to Article 32 (non hazardous substance) Regulation (EC) No 1907/2006 (REACH)

thyssenkrupp

Material identification: **Hot-dip galvanised sheet (Z); organically sealed (Cr-free) (S)**

Material number: TKE-124

Date of issue: 06.09.2005

Revised: 17.03.2017

Printed: 17.03.2017

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## 1 \* Identification of the substance and of the company

### 1.1 Product identifier

1.1.1 Name of product: Hot-dip galvanised sheet (Z); organically sealed (Cr-free) (S)

1.1.2 Additional identification:

### 1.2 Relevant identified uses of the substance and uses advised against

1.2.1 Relevant identified uses: Further manufacturing of steel products

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: OSH / Occupational Safety

Tel. +49 203 / 52 28 41 4

Fax. +49 203 / 52 26 62 8

1.3.8 E-mail (competent person): sicherheitsdatenblaetter-tks@thyssenkrupp.com

1.4 Emergency telephone number: +49 234 / 508-50250 (24 h/d available)

## 2 \* Hazards identification

2.1 Classification of the article: The preparation this article is made of is not classified as hazardous in the meaning of the Regulation (EC) No 1272/2008 (CLP).

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 (see occupational exposure limits chapter 8.1.1).

## 3 \* Composition/information on ingredients

3.1 Chemical characterisation: Carbon or low alloy steel, zinc coated

### 3.2 Ingredients of steel:

EC-No. Registration No.	CAS-No.	Name	Concentration [%]	Classification (EC) No 1272/2008
231-096-4 01-2119462838-24	7439-89-6	Iron	> 98	not classified

### 3.3 Coating:

EC-No. Registration No.	CAS-No.	Name	Concentration [%]	Classification (EC) No 1272/2008
231-175-3 01-2119467174-37	7440-66-6	Zinc	approx. 99	not classified

3.4 Material composition: Thin sheets coated with zinc (double sided) up to 400 g/m<sup>2</sup>. Sealed with acrylate lacquer up to 1 µm thickness.

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## 3.5 Further information:

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

The product fulfils the requirements according to Directive 2000/53/EC on the restriction of the use of certain hazardous substances (End of Life Vehicles Directive). According to our current state of knowledge no substances of the GADSL-list are present in the product above the concentration limits.

According to our current state of knowledge no substance are present in our products above 0.1% (w/w) 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. Seek medical advice if discomfort persists.

### 4.2 In case of inhalation:

Move affected person into fresh air.

### 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.

### 4.5 In case of ingestion:

Rinse mouth and drink plenty of water.

## 5 \* Fire-fighting measures

### 5.1 Extinguishing media

#### 5.1.1 Suitable extinguishing media:

Foam (alcohol-resistant), carbon dioxide-powder, spray (water). Steel (massive) does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

#### 5.1.2 Unsuitable extinguishing media:

none known

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

none known

### 5.3 Advice for firefighters:

Wear a self-contained breathing apparatus.

## 6 \* Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures:

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

### 6.2 Environmental precautions:

No special environmental measures are necessary.

### 6.3 Methods and material for containment and cleaning up:

Take up mechanically and collect material for recovery.

### 6.4 Reference to other sections:

Disposal: see section 13

Personal protection equipment: see section 8

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## 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 Advice on general occupational hygiene:

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 and strong alkali-solutions (release of hydrogen by contact with the pure metal possible).

## 8 \* Exposure controls / Personal protection

### 8.1 Control parameters

8.1.1 Occupational exposure limits (OELs):

CAS-No.	Name	Limit value - 8 h		Exceedance factor
		ml/m <sup>3</sup>	mg/m <sup>3</sup>	
	Dust, respirable		1.25 A	
	Dust, inhalable		10 E	2(II)

Source (German legislation): TRGS 900 "Arbeitsplatzgrenzwerte"

8.1.2 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/m<sup>3</sup>

### 8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Ordinary technical equipment (e.g. exhaust ventilation) is sufficient for welding.

8.2.2 Respiratory protection:

Not necessary (massive form).

8.2.3 Hand protection:

At appearance of dust: breathing filter P2. Depends on machining. If necessary use cut resistance gloves (EN 388). For example Kevlar<sup>®</sup> 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:

At appearance of dust: safety glasses. safety shoes, working clothes.

8.3 Environmental exposure controls:

For metal in massive form no special precautionary measures necessary.

## 9 \* Physical and chemical Properties

### 9.1 Information on basic physical and chemical properties

9.1.1 Physical state:

solid

9.1.2 Colour:

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:

No test necessary for inorganic steel.



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9.1.8	Flammability:	not flammable
9.1.9	Dust explosive properties:	n.a. (massive steel)
9.1.10	Vapour pressure:	n.a.
9.1.11	Relative Density:	steel ~ 7.80 g/cm <sup>3</sup> (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:	no auto-ignition
9.1.15	Oxidising properties:	not oxidising
9.2	Other information:	none

## 10 \* Stability and Reactivity

10.1	Reactivity:	Not reactive under normal conditions.
10.2	Chemical Stability:	Stable under normal conditions.
10.3	Possibility of hazardous reactions:	No dangerous reaction known.
10.4	Conditions to avoid:	No dangerous condition known.
10.5	Incompatible materials:	Avoid contact with acids and alkali-solutions (corrosion), release of hydrogen possible.
10.6	Hazardous decomposition products:	No hazardous decomposition product known.

## 11 \* Toxicological information

11.1	General information:	All given information refer to iron which represents the main proportion (>85%) of the article.
11.2	Acute toxicity:	There is no evidence for systemic toxicity. <b>oral (rat) carbonyl iron</b> LD <sub>50</sub> > 7500 mg/kg (CSR)
11.3	Corrosion/irritation:	<b>inhalative (rat) electrolytic iron powder</b> LC <sub>50</sub> (powder) (6h) > 250 mg/m <sup>3</sup> (CSR) <b>skin</b> (OECD 404): not irritating (CSR) <b>eye</b> (OECD 405): not irritating (CSR) Mechanical friction may cause irritation.
11.4	Sensitisation:	not sensitising
11.5	Repeated dose Toxicity:	<b>oral (rat) iron</b> LOAEL: 26mg/kg bw/day (CSR) <b>inhalative (rat) iron</b> NOAEC: 5mg/m <sup>3</sup> (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	STOT:	n.d.a.
11.8	Other information:	n.d.a.

## 12 \* Ecological information

12.1	General information:	All given information refer to iron which represents the main proportion (>85%) of the article.
12.2	Ecotoxicity:	There is no evidence for ecotoxicological impact*. <b>Aquatic, fish short term</b> ( <i>Brachydanio rerio</i> ) LLO (96h): > 1000 mg/l (iron oxide)

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- \*more studies can be found in CSR for iron.  
not relevant for inorganic substances
- 12.3 Persistence and degradability:**  
**12.4 Bioaccumulative potential:**  
**12.5 Mobility in Soil:**  
**12.6 Results of PBT and VPvB assessment:**  
**12.7 Other adverse effects:**
- n.a.: Iron is an essential substance, well regulated in all living organisms.  
n.a.: Iron oxidises in the environment and is stabilised in the iron(III)-oxide form in the long term.  
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.  
No negative ecological effects are expected according to the present state of knowledge.
- 13 Disposal considerations**
- 13.1 Waste treatment methods**  
**13.2 List of proposed waste codes/waste designations in accordance with EWC:**  
**13.3 Disposal packages:**
- Iron and steel should always be recycled.  
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.  
n.a.
- 14 \* Transport information**
- 14.1 Land transport (ADR/RID/CDG Road/CDG Rail):**  
**14.2 Inland waterway craft (ADN/ADNR):**  
**14.3 Marine transport (IMO):**
- No hazardous material as defined by transport regulations.  
No hazardous material as defined by transport regulations.  
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**  
**EU law**
- 15.1.1 Directive 1999/13/EC:**  
**15.1.2 Directive 2002/96/EC:**  
**15.1.3 Directive 2011/65/EU:**  
**15.1.4 Directive 2000/53/EC:**
- VOC-solvent emission: 0 %  
The product fulfills the directive „WEEE“ – Waste Electrical and Electronic Equipment.  
The product fulfills the requirements on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).  
The product fulfills the requirements on the End of Life Vehicles Directive (ELV).
- 15.2 National law:**  
**15.3 Chemical Safety Assessment:**
- Observe in addition the national legislative regulations!  
A chemical safety assessment is not necessary for this article.



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## 16 Other information

### 16.1 Documentation of changes:

\* Data changed compared with the previous version from 04.04.2006

### 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

LL0= "Lethal Loading" max concentration of a insoluble substance which leads to none mortality in the test system

### 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.*