



# EC - Material Safety Data Sheet

ThyssenKrupp Steel Europe AG According to Article 32 (non hazardous substance) Regulation (EC) No 1907/2006 (REACH) Material number: TKE-140

Material identification:  
Date of issue: 16.08.2005

Hot dip coated sheet Galfan® (ZA), Galvalume® (AZ)  
Revised: 18.08.2015

Printed: 18.08.2015

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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 coated sheet Galfan® (ZA), Galvalume® (AZ)  
1.1.2 Additional identification: Galfan® (ZA)  
Galvalume® (AZ)

### 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 article: The preparation this article is made of is not classified as hazardous in the meaning of 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: Carbon or low alloy, coated steel.

### 3.2 Ingredients of steel:

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

### 3.3 Ingredients coating Galfan®:

EINECS Registration no.	CAS-No.	Name	Concentration [%]	Classification Reg. (EC) No 1272/2008
231-175-3 01-2119467174-37	7440-66-6	Zinc	approx. 95	-
231-072-3 01-2119529243-45	7429-90-5	Aluminium	approx. 5	-

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### 3.4 Ingredients coating Galvalume®:

EINECS Registration no.	CAS-No.	Name	Concentration [%]	Classification Reg. (EC) No 1272/2008
231-072-3 01-2119529243-45	7429-90-5	Aluminium	approx. 55	-
231-175-3 01-2119467174-37	7440-66-6	Zinc	approx. 43	-
231-130-8 01-2119480401-47	7440-21-3	Silicon	approx. 2	-

### 3.5 Further information:

Thin sheets coated with zinc / aluminium single or double sided up to 300 g/m<sup>2</sup>; on customer request sheets can be oiled with corrosion protection oil.

In this article no substances mentioned in the GADSL-list are present above the given limit values. It fulfils the Directive 2000/53/EU (end-of life vehicles).

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 is present in our products 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 Suitable extinguishing media:

Foam (alcohol resistant), carbon dioxide powder and water spray jet. Massive steel products do not burn. Co-ordinate fire-fighting measures to the fire surroundings.

### 5.2 Extinguishing media which must not be used for safety reasons:

n.a.

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

none

### 5.4 Advice for firefighters:

none

## 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

## 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 <sup>3</sup>	mg/m <sup>3</sup>	upper limit
	dust, alveolar fraction (A)		1.25	
	dust, respirable fraction (E)		10	2(II)

#### 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/m<sup>3</sup>

### 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.

#### 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:	n.a.	
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:	~ 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:	n.a.	

## 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 hot 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)
		<b>inhalative (rat) electrolytic iron powder</b> LC <sub>50</sub> (powder) (6h) > 250 mg/m <sup>3</sup> (CSR)
11.3	Corrosion/irritation:	<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\*.  
**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  
EU law**

- 15.1.1 Directive 1999/13/EU: VOC-solvent emission: 0 %
- 15.1.2 Directive 2002/96/EU: The product fulfills the directive „WEEE“ – Waste Electrical and Electronic Equipment.
- 15.1.3 Directive 2011/65/EU: The product fulfills the requirements on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).
- 15.1.4 Directive 2000/53/EG: The product fulfills the requirements on the End of Life Vehicles Directive (ELV).
- 15.2 National law: Observe in addition the national legislative regulations!
- 15.3 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 28.02.2006.
- 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  
STOT = specific target organ toxicity
- 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.*