

Plain Carbon Steels

Safety Data Sheet

1. Identification of the Substance and company

1.1

Other names:	Mild steel, hot and cold rolled steels, branded names also
Description:	Plain carbon steel cast into many forms and also hot and cold rolled.

1.2

Used in many applications such as construction, automotive, energy/power, transport, defence and security, engineering, consumer products, lifting and excavating and packaging.

1.3

Company:	Tata Steel Long Products PO Box 1, Brigg road, Scunthorpe. DN16 1BP	Tata Steel Strip Products UK Port Talbot Works, Port Talbot, SA13 2NG	Tata Steel Strip Products Ijmuiden, PO Box 10000, 1970 CA, Ijmuiden	Tata Steel Speciality Manchester Road, Stocksbridge, Sheffield, S36 2JA
Telephone:	+44 (0) 1724 404040	+44 (0) 1639 871111	+31 (0) 251 495883	+44 (0) 114 2882361
Normal Hours:	Commercial / Technical support	Commercial / Technical support	Commercial / Technical support	Commercial / Technical support
Email:	reach@tatasteel.com	reach@tatasteel.com	reach@tatasteel.com	reach@tatasteel.com

1.4

Emergency:	Contact Security Department	Contact Security Department	Contact Security Department	Contact Security Department
-------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

2. Hazards Identification

2.1

Plain carbon steel is defined as an article under REACH and does not meet the requirements for classification as dangerous under both the EU Dangerous Substances (67/548/EEC) Directive and secondly according to the Classification, Labelling and Packaging of substances and mixtures (CLP) regulations (EC 1272/2008).

Activities such as mechanical working, dry grinding / sanding and hot working such as welding or flame cutting may give rise to irritant dust / fumes. (From the constituents of the steel.)

2.2

No label required, no signal word required.

2.3

Pre-finished steel can have sharp edges and corners, and relevant precautions should be taken when handling and storing. Under normal conditions of use and storage these materials are stable and non-toxic. Some steels may be coated with a non dangerous oil, however prolonged exposure may give rise to skin irritation.

3. Composition / information on ingredients

3.1

Plain carbon steels manufactured by Tata Steel Europe are mild steels that contain up to 2.5% total of alloying elements, plus carbon. Concentrations of alloying elements vary according to specification and customer requirements.

Depending on customer preference, these steels may be supplied bearing a protective or residual coating of light mineral oil, which is non hazardous.



Table showing typical composition of Plain Carbon Steel

Product area	Substance	EINECS No.	CAS No.	Range (%) by weight	Classification (Dangerous Sub Dir)	Classification (CLP Regs)
Steel substrate	Iron	231-096-4	7439-89-6	Balance	Not classified	Not classified
	Carbon	231-153-3	7440-44-0	0.001 - 0.50	Not classified	Not classified
	Manganese	231-105-1	7439-96-5	0.0 - 2.5	Not classified	Not classified
	Chromium	231-157-3	7440-47-3	0.0 - 0.60	Not classified	Not classified

4. First aid measures

4.1

Skin contact: Cuts (lacerations) to the skin from sharp steel edges, treat as a normal cut and if required seek medical attention. Wash if contaminated with oil coating.

Eye contact: If particles enter the eye then wash the eye with running water for at least ten minutes. Seek medical advice if irritation persists.

Inhalation: If hot work such as welding / burning causes exposure to significant concentrations of fume/dust, remove to fresh air. Seek medical attention if symptoms such as coughing persist.

Ingestion: None required.

4.2

The most important symptoms and effects for eye exposure are soreness and irritation are the main symptoms.

4.3

Immediate medical attention is required if lacerations are deep.

5. Fire fighting measures

Plain carbon steel is non-flammable and has a high melting point of >1000°C.

6. Accidental release measures

Plain carbon steel is sold in sheet form and an accidental spill could not be achieved.

7. Handling and Storage

7.1 Handling

Plain carbon steel is sold in many forms, sheet, coils, sections, tube, pipe, plate or in semi finished products. Care should be taken when handling, as there may be sharp edges present. Where required the use of hard wearing (protective) gloves and overalls could be used to prevent cuts and abrasions. Care should be taken when lifting heavy loads and where necessary use appropriate lifting equipment to do so. Coil bundles may be secured by banding straps, which may have been fitted under tension so care should be taken to remove those and lifting should not be carried out by using those straps. Straps or bands should not be used for lifting.

7.2 Storage

Some products may be secured by using straps or bands but they could cause injury to eyes or other injuries when tension is released. There may be sharp edges present, which could cause lacerations. Store in the appropriate facility to prevent damage, use suitable racks or storage pallets. Lifting should always be done to prevent personal (injury) damage to the operators and lifting equipment is advised at all time to move the steel unless a full risk assessment has been carried out.



8. Exposure controls and personal protection

8.1 Control parameters (Occupational Exposure Limits (OELs))

Please note these exposure limits are not directly associated with the product but with possible exposures that may occur when performing certain activities.

Current OELs (GESTIS International Limit Values Institut fuer Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA))

Country in EU with OEL for the relevant substance	Substance					
	Iron oxide (Fe ₂ O ₃ & FeO) as Iron		Dust inhalable		Dust respirable (also applicable as fume)	
	8 hr TWA (mg/m ³)	STEL (mg/m ³)	8 hr TWA (mg/m ³)	STEL (mg/m ³)	8 hr TWA (mg/m ³)	STEL (mg/m ³)
Austria	5.0 (resp)	10.0 (resp)	10.0	20.0	5.0	10.0
Belgium	5.0	---	10.0	---	3.0	---
Denmark	3.5	7.0	10.0	20.0	---	---
France	---	---	10.0	---	5.0	---
Germany (AGS)	---	---	10.0	20.0	3.0	6.0
Germany (DFG)	---	---	4.0	---	1.5	---
Hungary	6.0 (resp)	---	10.0	---	6.0	---
Poland	5.0	10.0	---	---	---	---
Spain	5.0	---	10.0	---	3.0	---
Sweden	3.5	---	10.0	---	5.0	---
United Kingdom	5.0	---	10.0	---	4.0	---

TWA - Time Weighted Average measured over an 8 hour period
 STEL - Short Term Exposure Limit Value -- 15 minute duration
 Resp - Respirable fraction of dust

8.2 Control Measures

Wear suitable gloves, overalls and eye/face protection when handling the pre-finished steel to prevent cuts and abrasions.

If hot work activities such as welding or burning or mechanical abrasion are to take place then local exhaust ventilation (LEV) should be used to remove any fume produced. During the use of LEV systems the manufacturers instructions and guidance should be followed at all times so that there is sufficient capture hood and capture velocity and the air cleaning system is in good working order. If a large amount of fume is generated then in conjunction with the LEV, use of suitable and approved respiratory protection should be worn if exposure is likely to be above the OEL. Ori-nasal respirators fitted with either a P2 or P3 filter (EN149: FFP2S / FFP3S) may be used when fume levels are high depending on concentration. Manufacturers directions for use must be followed and where applicable an RPE face fit test should be successfully completed before use. It should be necessary to prove a tight fitting face seal via face fit testing.

9. Physical and chemical properties

Property	Value used
Physical State at 20 °C/ 1013 hPa	Solid
Form	Plain carbon steel is a hard, dense silver/grey coloured metallic solid with added textile layer
Melting point	1450-1520 °C at 1013 hPa (steel)
Boiling point	Not applicable
Relative density	7.85 kg/dm ³ at 20 °C
Vapour pressure	Not applicable steels due to high melting point >1000 °C
Surface tension	Not applicable steels are an inorganic solid with very low aqueous solubility
Flash point	Not applicable steels are an inorganic solid with a high melting point >1000 °C
Flammability	Non flammable
Explosive properties	Non explosive
Oxidising properties	No
Viscosity	Solid



10. Stability and reactivity

The product is stable under normal conditions. When heated to high temperatures (>1000 °C) it may give rise to fumes (iron oxide).

11. Toxicological information

Under the general applications of this product health effects should not occur due to the low risk of exposure to minimal hazard material. If the following activities are carried out, mechanical working, such as dry grinding or machining or hot work such as welding and burning, dust / fume will be produced which may contain irritating components at sufficiently high enough concentrations. The principal route of entry into the body is via inhalation as fume/dust.

Acute toxicity

Excessive fume/dust may cause irritation and can be potentially harmful if inhaled into the body in large amounts over long time periods. This is not expected under general use of the product.

Skin corrosion / irritation

The potential fumes/dust arising is not known to be an irritant.

Eye damage / irritation

The potential fumes/dust arising is not known to be an irritant.

Respiratory / Skin sensitisation

The potential fumes/dust arising is not known to cause sensitisation.

Germ cell mutagenicity

No effect.

Carcinogenicity

No effect.

Reproductive toxicity

No effect.

Repeated dose toxicity - Inhalation

Exposure to iron oxide fume, in excessive concentrations and over long periods of time, may cause a benign condition called siderosis. Repeated inhalation could lead to cumulative effects. This condition is not expected under general use of the product.

12. Ecological information

There are no known harmful effects from the product to the environment. Under general application exposure to the environment should not occur.

12.1 Toxicity

No effect.

12.2 Persistence and Degradability

No effect.

12.3 Bioaccumulative potential

No effect.

12.4 Mobility in soil

No effect.

12.5 Results of PBT and vPvB assessment

Plain carbon steel is not PBT or vPvB.

13. Disposal considerations

Steel products are 100% recyclable and should be recycled at "end of life" in all situations.



14. Transport information

Plain carbon steel is not classified as dangerous under CLP or Dangerous Substances Directive for transport so there is no requirement for transport information. All subheadings in this section are not applicable for this product.

15. Regulatory information

15.1

Plain carbon steel specifications are covered by numerous ISO standards. All steels covered by this safety data sheet comply with the packaging and packaging waste EC Directive 94/62/EEC on heavy metal content, the Restriction of Hazardous substances directive 2002/95/EC and the End of Life Vehicle directive 2000/53/EC. The iron manufactured and used to produce this steel product has been registered under REACH along with any other component where a registration was required.

15.2

A Chemical Safety Assessment has not been carried out as Plain Carbon steel is defined as an article under REACH and does not require an assessment, plus it is not classified as dangerous under the CLP Regulations (EC)1272/2008 and or the Dangerous Substances Directive (67/548/EEC).

16. Other Information

Revision

This safety data sheet (SDS) has been produced / revised in line with Annex II of the REACH Regulations (2006) as guidance only, as articles do not require a SDS. Information in this safety data sheet is supplied to inform the customer and should be used where necessary.

This revision is the current version dated **January 2011**

Previous Versions: *November 2010*

June 2009 (as Corus)

September 2008 (as Corus)

March 2002 (as Corus)

Risk and Safety Phrases according to (67/548/EEC):

No Risk phrases.

Hazard and Precautionary Statements according to CLP Regulations (EC)1272/2008:

No Hazard statements.

References

GESTIS International Limit Values Institut fuer Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA) – website: http://bgia-online.hvbg.de/LIMITVALUE/WebForm_gw.aspx

Disclaimer

The information, specifications, procedures, and recommendations herein are presented in good faith and are believed to be accurate and reliable at the date of issue. Where information is taken from supplied items it is the responsibility of the supplier to ensure the accuracy of the data. The individual authors of this safety sheet are deemed to be appropriately competent. This safety data sheet was constructed using the guidance provided under the REACH regulations ((EC) No 1907/2006) as to the format and information required. For steel articles a safety data sheet is not a legal requirement and is provided for the convenience of downstream users. Occupational exposure limits (OEL) used in this safety data sheet will be EU OELs and where these limits do not exist UK OELs will be the reference limit. No liability can be accepted with regard to the handling, processing or use of the product concerned which, in all cases, shall be in accordance with appropriate regulations and or legislation. Tata Steel Europe gives no warranty or representation as to the accuracy of the information or for the guidance being for, or suitable for, a specific purpose. All implied warranties and conditions are excluded, to the maximum extent permitted by law. Use of this document by any third party is at your own risk. Save to the extent that liability cannot be excluded by law, Tata Steel Europe is in no way responsible or liable for any damage or loss whatsoever arising from the use of or reliance on the information and guidance contained in this document.