

Mill Scale

1. Identification of the Substance and company

This waste product has not been registered under REACH due to it being defined as a WASTE. Since it is not covered by REACH it does not legally require a safety data sheet. However, in order to provide duty of care to customers, a safety data sheet has been written using the guidance laid down in REACH, although it is stressed that this does not mean that this safety data sheet constitutes a legal document.

1.1 Product identifier

Other names:	Mill scale, mill scale sludge, mill scale sludge
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1.2 Description

A secondary product formed during the hot working of plain carbon steels and cold processing of heated steels.

1.3 Details of supplier

Company:	Liberty Speciality Steels, Fox valley Way Stocksbridge, Sheffield, S36 2JA
Telephone:	+44 (0) 114 2882361
Normal Hours:	Commercial / Technical support
Email:	contactus@specialityuk.com

1.4 Emergency contact

Emergency:	Contact Department	Security
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2. Hazards Identification

2.1 Classification

Mill scale is defined as a waste under REACH and does not meet the requirements for classification as dangerous under the Classification, Labelling and Packaging of substances and mixtures (CLP) Regulations (EC 1272/2008).

2.2 Label elements according to CLP regulations (EC)1272/2008

No label or signal word required.

2.3 Other hazards

Mill scale may be contaminated with some residual oil from the process, prolonged contact with the skin may also cause skin irritation, although the risk is low.

3. Composition / information on ingredients of Mill scale

Mill scales are composed mainly of iron oxides and may contain varying amounts of other oxides, elements and trace compounds.

Substance	Classification (CLP Regs)	Range (%) by weight
Iron oxide (as FeO, Fe ₂ O ₃ , Fe ₃ O ₄)	Not classified as dangerous	>70.0%
Moisture (@ 105°C)	---	14.0 – 16.0

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4. First aid measures

4.1 Description of first aid measures Skin

contact: Wash with water and soap.

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

Inhalation: Provide fresh air. Seek medical attention if irritation persists.

Ingestion: None required.

4.2 Most important symptoms and effects

No additional important symptoms or effects other than those highlighted above.

4.3 Indication of any immediate medical attention or treatment

For immediate medical attention and special treatments please follow the advice given in Section 4.1.

5. Fire fighting measures

5.1 Extinguishing media

This waste product may be combustible but is difficult to ignite under normal conditions. Fires involving petroleum products should be extinguished by blanketing the fire with foam, dry powder or inert gas.

5.2 Special hazards

No special hazards known.

5.3 Advice for fire fighters

Fires involving petroleum products should be extinguished by blanketing the fire with foam, dry powder or inert gas.

6. Accidental release measures

6.1 Personal precautions

Wear suitable personal protective clothing and equipment.

6.2 Environmental precautions

Do not allow product to reach sewage systems or water bodies.

6.3 Methods for cleaning up

Contain any spillages and recover spilt material, for correct disposal or recycling, where possible using mechanical devices.

7. Handling and Storage

7.1 Handling

Information for safe handling: use mechanical equipment to handle and move this waste product.

7.2 Storage

No special precautions required.

7.3

No specific end uses.

8. Exposure controls and personal protection

8.1 Control parameters [occupational exposure limits (OELs)]

Current OELs in the UK (EH40 2011)

Substance	United Kingdom	
	8-h TWA (mg/m ³)	STEL (mg/m ³)
Iron oxide fume (as Iron)	5.0	10.0
TWA – Time-weighted average measured over an 8 hour period STEL – Short-term exposure limit value – 15 minute duration mg/m ³ - milligrams per cubic metre (unit of concentration)		

8.2 Control Measures

All handling of the product should be carried out using machinery to prevent or minimise contact. Respiratory protection: not necessary.

Hand protection: use of gloves is advisable.

Eye protection: the use of safety goggles is advisable.

Skin protection: personal protective equipment for the body should be selected based on the task being performed and the risks involved. Thermal hazards: none.

Emergency facilities: safety showers and eye wash station are strongly advised. Other information: wear safety shoes.

High standards of personal hygiene should be adhered to when working with this material, including washing of hands and face before consuming food. In dusty conditions wear suitable eye/face protection such as goggles and/or visors. Gloves used to prevent dermal exposure should be made of a material capable of preventing oil breakthrough.

8.2.1 Environmental

The substance should be handled with care and should not be allowed to enter water or soil systems.

9. Physical and chemical properties

Property	Value used
Physical State at 20°C/ 1 013 hPa	Solid
Odour	No detectable odour
Melting point	> 1400°C at 1 013 hPa
Water solubility	Insoluble in water (<1 µg/l)
Relative density	Between 3.2 and 5.7 g/cm ³ at 20 °C

10. Stability and reactivity

The material is stable under normal conditions.

11. Toxicological information

The oxides of iron (Fe₂O₃, FeO, and Fe₃O₄) are not soluble in water to any significant extent (0.05 µg/l at 25 °C). This lack of solubility precludes any significant systemic exposure to soluble iron species via ingestion, skin contact or inhalation and therefore bioavailability is limited.

Acute toxicity/Irritation/Corrosion/Respiratory/Skin sensitisation

No major acute effects, if oil is present prolonged exposure and contact with the skin could lead to dermatitis.

**Skin corrosion/irritation**

The potential fumes/dust arising are not known to be irritants.

Eye damage/irritation

The potential fumes/dust arising are not known to be an irritants.

Respiratory/Skin sensitisation

The potential fumes/dust arising are 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 normal uses of the product.

12. Ecological information

There are no known harmful effects from the product on the environment. Under normal applications exposure to the environment should not occur. Owing to the low concentrations of oil in this waste product it is not defined as an ecotoxic waste product.

12.1 Toxicity

No effect.

12.2 Persistence and Degradability

For an inorganic substance, biotic degradation in the environment is irrelevant for the purposes of persistence and degradability.

12.3 Bioaccumulative potential

Iron and its compounds are essential compounds. Iron is an essential trace element, well regulated in all living organisms. The available evidence shows the absence of iron biomagnification across the trophic chain in both the aquatic and terrestrial food chains. The existing information suggests not only that iron does not biomagnify, but rather that it tends to exhibit biodilution.

12.4 Mobility in soil

Iron and its compounds are found in the form of hydroxides in the environment. They are stabilised in the form of oxides in the long term.

12.5 Results of PBT and vPvB assessment

As mill scale is not bio-available, owing to its extreme insolubility in water, it is not systemically available or bio-accumulative and hence it does not fulfil either of the PBT and vPvB criteria for classification.

13. Disposal considerations

Mill scale should always be recycled and never land filled. However if this is not possible the waste hierarchy should be considered when managing this waste. Disposal should be in accordance with current local and national legislation.

14. Transport information

Not applicable.



15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REACH: Not registered under REACH as it is defined as a waste.

Authorisations: not required, not present on the candidate list of substances of very high concern.

Restrictions on use: none

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance, since it is not REACH applicable.

16. Other Information

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

Revision

This safety data sheet has been produced/revised in line with Reg 453/2010 - Annex II of the REACH Regulations (2010) however this is not legally required.

This revision is the current version dated **May 2017** Changes: *Re-brand to liberty steel, also remove non Liberty Speciality steels site.*

Previous Versions: **August 2015** Changes: *deleted references to Dangerous Substances Directive to comply with June 2015 requirements CLP. Also minor edits.*

February – 2013

August – 2012

References

Health and Safety Executive, 2011: EH40 - Workplace Exposure Limits (amended 2011). Health and Safety Executive, UK. Environment Agency document HWR08 V3.1, How to find out if waste oil and wastes that contain oil are hazardous. 2007

Mill Scale REACH Registration dossier

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. Liberty Speciality Steels 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, Liberty Speciality Steels 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.