

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product name:	WORK TOOL STEEL- SIHARD, SITHERM
Description:	<p>SIHARD- cold-work tool steels The SIHARD brand steels are adapted for machining and cutting metal, wood and synthetic materials and have the characteristics of dimensional stability, high compressive strength and the required toughness, considering their intended use. SIHARD brand steels are used for cyclically loaded tools such as: punchers, pressers, die inserts for the compaction of powders, knives/blades, forging, rolling and deep drawing tools. Tool steel is normally delivered in a soft-annealed condition.</p> <p>SITHERM- hot-work tool steels The SITHERM brand encompasses premium-grade high-temperature and hot-work steels. These are used in dynamic loading, and the design and manufacture of ferrous as well as nonferrous metals and steels. SITHERM brand steel is used to manufacture complex tools such as: moulds, die casting tools, high pressure die casting tools, cores, hot cutting and extrusion tools. The tool surface is exposed to cyclic temperature variations and mechanical loadings. In response to this, SITHERM brand steel is characterised by high tempering resistance, great toughness, and ductility by hot in cold conditions . SITHERM brand steel is usually delivered in a soft-annealed condition.</p>

1.2. Relevant identified uses of the product:

Identified uses

Production of metallic articles.

Uses advised against

not applicable

1.3. Details of the supplier of the safety data sheet:

Manufacturer: Metal Ravne, d.o.o.,
Koroška cesta 14, SI – 2390 Ravne na Koroškem, Slovenia
Tel: +386 2 87 07 000
E: info@metalravne.com
W: <http://www.metalravne.com>

1.4. Emergency telephone:

Tel. No.: Tel: +386 2 87 07 000

Fire brigade: 112 (SLO)

In the case of risks to health, contact personal physician or the National Poison Control Centers.

SECTION 2: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008: **not classified**

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: **Void**

2.3 Other hazards

not applicable

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

For mixtures see 3.2

3.2 Mixtures

Material/Component	Product identifier CAS number	%	Classification according to Regulation (EC) No. 1272/2008 (CLP)
Base material			
Iron (Fe)	7439-89-6	balance	Not classified
Alloying Elements			
Carbon (C)	7440-44-0	0,01 – 2,5	Not classified
Chromium (Cr)	7440-47-3	0,07 – 20,0	Not classified
Tungsten (W)	7440-33-7	0,01 – 9,0	Tungsten metal Flam. Solid 1; H228 Self Heat. 2; H252
Nickel (Ni)	7440-02-0	0,09 – 4,5	Nickel metal Carc. 2; H351 STOT Rep. Exp. 1; H372 Skin Sens. 1; H317
Molibden (Mo)	7439-98-7	0,03 – 3,5	Not classified
Vanadium (V)	7440-62-2	0,01 – 2,5	Not classified
Copper (Cu)	7440-50-8	0,05 – 1,5	Not classified

Cobalt (Co)	7440-48-4	0,01 – 3,0	Skin Sens; H317 Resp. Sens. 1; H334 Aquatic Chronic 4; H413
Manganese (Mn)	7439-96-5	0,01 – 2,5	Not classified
Silicon (Si)	7440-21-3	0,1 – 2,0	Not classified
Aluminium (Al)	7429-90-5	0,006 – 1,0	Not classified

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General: There are no specific First Aid Measures developed for the steel. Medical attention should be provided in case of an excessive inhalation of dust or a physical injury to the skin or to the eyes.

In the event of exposure by inhalation:

In case of overexposure to dusts or fumes, remove to fresh air.

In the event of contact with skin:

In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

In the event of contact with eyes:

In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

In the event of swallowing:

Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

In case of doubt or persistent symptoms, consult always a physician.

Notes to Physician

Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytes. Treatment is symptomatic, and condition is self limited in 24-48 hours.

Chronic exposure to dusts may result in pneumoconiosis of mixed type.

SECTION 5: FIREFIGHTING MEASURES

Steels are not combustible. There are no special hazards or precautions associated with steels if in the vicinity of a fire.

5.1. Extinguishing media

Suitable extinguishing media: Coordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Fire hazard: The product itself does not burn.

5.3. Advice for firefighters

Protection during firefighting: wear self-contained breathing apparatus.

5.4 Other information:

Do not allow run-off fire-fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Prevent forming of dust. Protect yourselves from dust inhalation. Use personal protective equipment for protection of skin and respiratory system. Consider safety regulations (look chapters 7 and 8)

6.2. Environmental precautions

With technical measures prevent the emission of dust and fumes to environment.

6.3. Methods and material for containment and cleaning up

Waste material doesn't present danger for environment. Use as raw material in production of steel.

SECTION 7: HANDLING AND STORAGE

There are no special measures for handling steels. Normal precautions should be taken to avoid physical injuries produced mainly by sharp edges. Personal protective equipment must be used e.g. special gloves and eye protection.

7.1. Precautions for safe handling

Avoid breathing in and contact with fumes and dusts during processing. No specific requirements for bulk solid steel products.

7.2. Conditions for safe storage, including any incompatibilities

No specific storage procedures are required for bulk solid steel products.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

*Component Exposure Limits

Material (CAS)	Component Exposure Limits		
	8 hour	KTV	notes
	mg/m ³	mg/m ³	
Manganese (7439-96-5)	0,2 (I) 0,05(A)	1,6 (I) 0,4 (A)	Y, EU ⁴
Chromium (7440-47-3)	2 (I)	2 (I)	EU ²
Nickel (7440-02-0)	0,006 (A)	0,048 (A)	Y, ECA

** Component Exposure Limits

Material (CAS)	Component Exposure Limits		
	OSHA mg/m ³	NIOSH mg/m ³	Notes
Chromium(7440-47-3)	1 mg/m ³	0,5 mg/m ³	
Nickel (7440-02-0)	1 mg/m ³	0,015 mg/m ³	
Molibden (7349-98-7)	15 mg/m ³	5 mg/m ³ -soluble compounds as Mo	
Vanadium (7440-62-2)	0,05 mg/m ³ -respirable dust, as V ₂ O ₅ 0,05 mg/m ³ - fume, as V ₂ O ₅	5 mg/m ³	
Tungsten (7440-33-7)	5 mg/m ³	5 mg/m ³ - STEL 10 mg/m ³ - TWA	
Cobalt (7440-48-4)	0,1 mg/m ³	0,05 mg/m ³	
Silicon (7440-21-3)	15 mg/m ³ - total dust 5 mg/m ³ - respirable fraction	10 mg/m ³ - total dust 5 mg/m ³ - respirable fraction	
Manganese (7439-96-5)	5 mg/m ³ - Ceiling	1 mg/m ³ - fume 3 mg/m ³ - STEL	
Copper (7440-50-8)	0,1 mg/m ³ - dust, fume, mist, as Cu	1 mg/m ³ - dust and mist 0,1 mg/m ³ - fume	ACGIH: 0,2 mg/m ³ TWA (fume)
Aluminium (7429-90-5)	15 mg/m ³ - total 5 mg/m ³ TWA (resp)	10 mg/m ³ TWA (total); 5 mg/m ³ TWA (resp)	

8.2. Exposure control

8.2.1 Appropriate engineering controls

Local exhaust ventilation should be used during welding, machining and other processes which may generate airborne contaminants. Dust or fume respirators may also be used.

8.2.2 Personal protection measures, such as personal protective equipment

Hand protection

Protective gloves: gloves against mechanical hazards

Eye / face protection

Safety glasses or goggles when there is a reasonable probability of contact with dust and fume.

Other protective clothing or equipment

Safety shoes and clothing

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Solid
Solubility in water (20 °C):	insoluble
Specific gravity:	7,2 – 7,8 g/cm ³
Melting point:	approximately 1530 °C
Boiling point:	approximately 2800 °C
Vapour pressure:	not applicable
Odour and appearance:	silver-grey metallic, various shapes, odourless

9.2. Other information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal ambient atmospheric conditions of use, storage and transport

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Avoid creating or spreading dust. Sparks, heat, open flames and other sources of ignition.

10.5. Incompatible materials

Acids, oxidizing agents and reducing agents. During the reaction with strong acids hydrogen gas and heat are generated.

10.6. Hazardous decomposition products

Metallic oxide fumes

SECTION 11: TOXICOLOGICAL INFORMATION

In its natural state steel has no acute effect.

Lethal concentration (LC50): none established

Reproductive effects: not applicable

Lethal dose: not applicable

Mutagenicity: not applicable

Teratogenicity: not applicable

Carcinogenicity: no (fumes or dusts may be carcinogenic over long periods of exposition)

SECTION 12: ECOLOGICAL INFORMATION

There are no hazards to the environment from steel in the forms supplied.

Steel is part of an integrated in a life cycle and it is a material capable of being 100% recycled. Thus, surplus and scrap (waste) high- speed steel is valuable and in demand for the production of prime new carbon steel. Recycling routes are well-established, and recycling is therefore the preferred disposal route. While disposal to landfill is not harmful to the environment, it is a waste of resources and therefore less desirable than recycling.

12.1. Toxicity

No aquatic toxicity data available for the substances.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sort of waste material: Cuts, waste materials, dust which occur at processing.

Convenient methods of waste material removal: Waste material should be collected separately from other materials and returned to department of steel processing.

Classification number of waste material:

12 01 01 fillings and chips of steel

12 01 02 other steel particles

SECTION 14: TRANSPORT INFORMATION

- 14.1** UN NUMBER: Not applicable
- 14.2** UN PROPER SHIPPING NAME: Not applicable
- 14.3** TRANSPORT HAZARD CLASS(ES): Not applicable
- 14.4** PACKING GROUP: Not applicable
- 14.5** ENVIRONMENTAL HAZARDS: Not applicable
- 14.6** SPECIAL PRECAUTIONS FOR USER: Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Article under REACH Regulation 1907/2006/EC and Commission Regulation (EU) 2020/878 : according to REACH, there is no legal obligation to provide a Safety Data Sheet for an Article. However, to be able to provide information on the safe use of this Article, the present Safety Information Sheet has been worked out.

No REACH Annex XVII restrictions

Contains no substance on the REACH candidate list

* Rules on the protection of workers from the risks related to exposure to chemical substances at work (Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu, Ur. l.RS št. 72/21).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: OTHER INFORMATION

Full text of H and EUH - phrases

Carc.2: Carcinogenicity, Category 2

STOT Rep. Exp. 1: Specific target organ toxicity – Repeated exposure, Category 1

Skin Sens. 1: Sensitisation – Skin, category 1

Flam. Solid 1: Flammable Solid, Category 1

Self Heat. 2: Self – heating, Category 2

Resp. Sens 1: Respiratory sensitisation, Category 1

Aquatic Chronic 4: Aquatic Chronic, Category 4

H228: Flammable Solid

H252: Self-heating in large quantities; may catch fire

H317: May cause an allergic skin reaction.

H351: Suspected of causing cancer.

Route of exposure: Inhalation

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

H372: Causes damage to organs.

Affected organs: respiratory tract only. Route of exposure: Inhalation

H413: May cause long lasting harmful effects to aquatic life

Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;

ADR/RID = European Agreement of Dangerous Goods by Road/Rail;

EINECS = European Inventory of Existing Commercial Chemical Substances;

ELINCS = European List of Notified Chemical Substances;

EU = European Union;

ECA = Relationship between the concentration of carcinogens in the air at the workplace and the amount of the substance and/or its metabolites in the organism - usually given for carcinogens, but not necessarily.

EU² = Threshold set by Commission Directive 2006/15/EC of 7 February 2006 on laying down a second list of indicative occupational exposure limit values for implementing Council Directive 98/24/EC and amending Directive 91/322/EEC and Directive 2000/39/EC (OJ L 38, 9.2.2006, p. 36).

EU⁴ = Limit value established by Commission Directive 2017/164/EU of 31 January 2017 on establishing the fourth list of indicative occupational exposure limit values in Council Directive 98/24/EC and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU (OJ L 27, 1.2.2017, p. 115).

I = Inhalable fraction - the fraction of the total suspended matter inhaled by a worker.

Y = Substances with no risk to the foetus, taking into account the limit values and BAT Values.

IARC = International Agency for Research on Cancer;

MAK = Maximum Concentration Value in the Workplace;

NIOSH = National Institute of Occupational Safety and Health;

NOHSC = National Occupational Health & Safety Commission;

NTP = National Toxicology Program;

STEL = Short-term Exposure Limit;

TLV = Threshold Limit Value;

TSCA = Toxic Substances Control Act;

TWA = Time Weighted Average

Declaration:

The information given in this safety data sheet is based on the present level of our knowledge and experience. The data sheet describes the product with respect to safety requirements. The given data are not intended as a confirmation of product properties and does not constitute a legal contractual relationship, nor should be used as the basis for ordering these products.

Steel products are considered as articles under the REACH Regulation (1907/2006/ EC).

In accordance with REACH and the CLP Regulation, only substances and preparations require a Safety Data Sheet (SDS). While articles under REACH do not require a classic SDS, REACH Article 32 requires articles to be accompanied by sufficient information to permit safe use and disposal.

REFERENCES

1. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
2. CLP - Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008
3. ** <http://www.cdc.gov/niosh/npg/>
http://www.dir.ca.gov/title8/5155table_ac1.html#_blank

END OF SAFETY DATA SHEET