SECTION 1: Introductory information

Solid steel products are considered as *articles* under the REACH Regulation (1907/2006/EC), a position adopted by all European steel producers, as presented in the EUROFER position paper determining the borderline between preparation and articles for steel and steel products.

In accordance with REACH and the CLP Regulation only substances and preparations require a Safety Data Sheet (SDS). *Articles* under REACH *do not* require a SDS. According to REACH Article 32 *articles* require to be accompanied by sufficient information to permit safe use and disposal. This Safety Information Sheet (SIS) presents relevant information for downstream users in order to secure a proper use of the steel articles supplied.

SECTION 2: Data of article

2.1. Article supplier details:

Manufacturer: Uddeholms AB

Address: Uvedsvägen 15
SE - 683 85 Hagfors
SWEDEN

Contact: hse@uddeholm.com

2.2. Article description:

The steel product (article) consists of a number of substances, mainly alloyed metals. Nickel and cobalt are the components of major importance with regard to hazard classification. Other components are iron (balance) and trace elements such as carbon, silicon, manganese, copper and aluminium.

Hazardous Substances	CAS-number	EC-number
Nickel	7440-02-0	231-111-4
Cobalt	7440-48-4	231-158-0

UAB specifications in the appendix (section 6).

2.3. Classification of the article:

Labelling according to Regulation (EC) No. 1272/2008 CLP Regulation;

Steel products (articles) in massive form do not require a label according to Annex I Segment 1.3.4., if they do not present a hazard to human health by inhalation, ingestion or contact with skin or the aquatic environment in the form in which they are placed on the market.

Nevertheless, this SIS provides the classification of the major hazard substances in the article, intended as an information for downstream users or distributors.

Constituent substances with hazardous classification:

Nickel

Hazard pictograms:

Signal word: DANGER

Hazard Statements:

H317 May cause an allergic skin reaction
H351 Suspected of causing cancer by inhalation
H372 Causes damage to organs through prolonged or repeated exposure
H412 Harmful to aquatic life with long-lasting effects

Note:
In accordance with the CLP Regulation, steels containing more than 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 1 (STOT RE1) and steels containing 1 to 10% nickel should be classified as Specific Target Organ Toxicity Repeated Exposure 2 (STOT RE 2). Steels containing more than 1% nickel should be classified as Carcinogen Category 2.

Cobalt

Hazard pictograms:

Signal word: DANGER

Hazard Statements:

H317 May cause an allergic skin reaction
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 Suspected of causing genetic defects
H350 May cause cancer
H360F May damage fertility
H413 May cause long lasting harmful effects to aquatic life

2.4. Article composition:

Amount of hazard substances in the article:

Substance	CAS-Number	EC-Number	Content (%)
Nickel	7440-02-0	231-111-4	0 - 12 %
Cobalt	7440-48-4	231-158-0	0 - 1 % (up to 10,5 %)*

** all alloys has a cobalt content up to 1% except Vanadis 30, Vanadis 60, Vanadis 30 SuperClean and Vanadis 60 SuperClean that has a cobalt content up to 10,5 %.*

2.5. Article physical and chemical properties:

Physical state	Solid
Colour	Silvergrey
Odour	Odourless
Water solubility	Insoluble

Steels are stable and non-reactive under normal ambient atmospheric conditions. Only when molten or during welding operations (i.e. heated to very high temperatures), fumes may be produced.

None of these substances is intended to be released under normal or reasonably foreseeable conditions of use. Exposure to humans or the environment during normal or reasonably foreseeable conditions of use, including disposal, is negligible.

SECTION 3: Information on the safe use of steel products

Steels are generally considered to be non-hazardous to human health or the environment (see paragraph 3.2). Uddeholm steels are sometimes used for applications where safety and hygiene are of importance e.g. drinking water, food contact materials, medical devices etc.

This SIS presents relevant information for downstream users in order to secure a proper use of the steel articles supplied.

3.1. Safety Information:

Description of Hazards
By handling the product, there is a risk of causing lacerations.

Alloys containing nickel and/or cobalt may cause health hazards by inhalation of dusts and fumes, which can occur through mechanical and thermal treatment (e.g. grinding, polishing, welding or cutting). Over long periods, inhalation of excessive airborne levels may have long-term health effects, primarily affecting the lungs. Nickel and cobalt are sensitizing and can cause an allergic skin reaction. Prolonged or repeated skin contact may cause dermatitis to nickel-sensitised persons.

Exposure to cobalt may cause cancer and should therefore be avoided. Measures to prevent inhalation of cobalt-containing dust may be needed, depending on the process and type of steel. Skin contact with cobalt dust should also be avoided, as cobalt can be absorbed through the skin. Nickel metal is also suspected of causing cancer although the evidence is still ambiguous.

Certain types of processing (see below) may give rise to the risk of exposure to hexavalent chromium (chromium IV), which is classified as a group 1 carcinogenic by the IARC.

Hazardous reactions: on contact with acids, hydrogen can be generated and form explosive gas mixtures.

Specific process and exposure controls

There are no specific occupational exposure limits for steel. However, specific occupational exposure limits have been established for some constituent elements and compounds. Users of the Safety Information Sheet are strongly advised to refer to the Occupational Exposure Limits set by their State for the substances in the steel and where relevant, for inorganic dust or welding fume. A risk assessment should always be carried out with regard to current processes and conditions. Particularly, nickel and cobalt are substances that can pose a health hazard when exposed.

Dust and fume may be generated during processing e.g. welding, cutting and grinding. If airborne concentrations of dust and fume are excessive, inhalation over long periods may affect workers' health, primarily of the lungs. Dust and fume quantity and composition depend on the specific practice. Oxidized forms of the various alloying elements of steel may be found in welding fumes.

Welding and flame cutting fumes may contain hexavalent chromium compounds. Studies have shown that some hexavalent chromium compounds can cause cancer. However, epidemiological studies amongst welders indicate no extra increased risk of cancer when welding steels, compared with the slightly increased risk when welding steels that do not contain chromium. Chromium in steel is in the metallic state (zero valence) and steel does not contain hexavalent chromium.

Under some conditions during treatment of steels hexavalent chromium could be generated on the surface. During heat treatment and remains of e.g. sodium chloride (NaCl) the generation of hexavalent chromium on the surface is possible. Also during treatment with oxidizing acids or oxidizing salt melts, hexavalent Chromium can be generated.

The process of welding should only be performed by trained workers with the personal protective equipment in accordance with the laws of each State relating to safety. Guidance on the welding of metals and alloys is provided on the EUROFER website. The guidance document will provide background information on health hazards posed by welding processes and appropriate Risk Management Measures.

First Aid Measures

There are no specific First Aid Measures developed for 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.

Note: Austenitic stainless steel particles are non-magnetic or only slightly magnetic and may not respond to a magnet placed over the eye. In such cases seek hospital treatment.

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.

Notes:
1. Steels should be stored in manner that prevents iron contamination. Avoid placing or storing steel in uncoated iron or steel racks and protect from iron emissions from cutting/grinding operations.
2. Care should be taken to avoid exposing fine process dust (e.g. from grinding and blasting operations) to high temperatures as it may present a potential fire hazard.

Uses

Steels are present in a wide variety of activities. Main use areas include industrial processes, architectural and transportation.

3.2. Environmental Information

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

Steel is part of an integrated life cycle and it is a material capable of being 100% recycled. Thus, surplus and scrap (waste) steel is valuable and in demand for the production of prime new 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.

SECTION 4: Additional information

The information and data in this safety information sheet are based upon our current knowledge. They shall not be binding and shall, in case of contract conclusion, not be regarded as warranted.

These data shall merely constitute average values that become binding only if explicitly specified in a contract concluded with us.

The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

Our company has certificates according to ISO 9001, ISO 14001, ISO 45001 and ISO 50001.

SECTION 5: 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. EUROFER website; https://www.eurofer.eu/

SECTION 6: Appendix

Hot Work Steel	Cold Work Steel	Plastic Mould Steel	Other
Uddeholm Alvar 14	Uddeholm Arne	Uddeholm Corrax	ASSAB 718 HH
Uddeholm Balder	Uddeholm Caldie	Uddeholm Corrax TIG Weld	RO 169
Uddeholm Balder SA	Uddeholm Caldie TIG Weld	Uddeholm Elmax SuperClean	SR 1855
Uddeholm Bure	Uddeholm Calmax	Uddeholm Holdax	Steel foil supplied by Uddeholms AB
Uddeholm Bure HT	Uddeholm Calmax TIG Weld	Uddeholm Idun	W.-Nr.: 1.2083
Uddeholm Dievar	Uddeholm Calmax/Carmo Weld	Uddeholm Impax High-Hard	W.-Nr.: 1.2344
Uddeholm Dievar LASER Weld	Uddeholm Carmo	Uddeholm Impax LASER Weld	W.-Nr.: 1.2363
Uddeholm Dievar MIG Weld	Uddeholm Carmo/Calmax MIG Weld	Uddeholm Impax Supreme	W.-Nr.: 1.2379
Uddeholm Dievar TIG weld	Uddeholm Chipper	Uddeholm Impax TIG Weld	
Uddeholm Formvar	Uddeholm Fermo	Uddeholm Impax Weld	
Uddeholm Hotvar	Uddeholm Formax	Uddeholm Mirrax 40	
Uddeholm Orvar 2 Microdized	Uddeholm Formax M	Uddeholm Mirrax ESR	
Uddeholm Orvar LASER Weld	Uddeholm Rigor	Uddeholm Mirrax LASER Weld	
Uddeholm Orvar Superior	Uddeholm Sleipner	Uddeholm Mirrax MIG Weld	
Uddeholm Orvar Supreme	Uddeholm Skolvar	Uddeholm Mirrax TIG Weld	
Uddeholm QRO 90 HT	Uddeholm Sverker 21	Uddeholm Nimax	
Uddeholm QRO 90 LASER Weld	Uddeholm UHB 11	Uddeholm Nimax ESR	
Uddeholm QRO 90 MIG Weld	Uddeholm Vanadis 4 Extra SuperClean	Uddeholm Nimax LASER Weld	
Uddeholm QRO 90 Supreme	Uddeholm Vanadis 6 SuperClean	Uddeholm Nimax MIG Weld	
Uddeholm QRO 90 TIG Weld	Uddeholm Vanadis 8 SuperClean	Uddeholm Nimax TIG Weld	
Uddeholm QRO 90 Weld	Uddeholm Vanadis 10 SuperClean	Uddeholm Polmax	
Uddeholm Vidar 1	Uddeholm Vanadis 23 SuperClean	Uddeholm Ramax HH	
Uddeholm Vidar 1 ESR	Uddeholm Vanadis 30 SuperClean	Uddeholm RoyAlloy	
Uddeholm Vidar Superior	Uddeholm Vanadis 60 SuperClean	Uddeholm Stavax ESR	
Uddeholm Vidar Supreme	Uddeholm Vancron 40 SuperClean	Uddeholm Stavax LASER Weld	
	Uddeholm Vancron SuperClean	Uddeholm Stavax TIG Weld	
	Uddeholm Viking	Uddeholm Tyrax ESR	
		Uddeholm Tyrax LASER Weld	
		Uddeholm Tyrax MIG Weld	
		Uddeholm Unimax	
		Uddeholm Unimax TIG Weld	
		Uddeholm Vanax SuperClean	