SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 20-Feb-2024 **Revision Number** 3

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

1.1. Product identifier

Product Description: Carpenter 20 gauze
Cat No. : 46526

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
Erlenbachweg 2, 76870 Kandel, Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Skin Sensitization	Category 1 (H317)
Carcinogenicity	Category 2 (H351)
Specific target organ toxicity - (repeated exposure)	Category 1 (H372)

Environmental hazards
Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Danger**

Hazard Statements
H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P201 - Obtain special instructions before use
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention

2.3. Other hazards

Toxicity to Soil Dwelling Organisms
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Nickel	7440-02-0	EEC No. 231-111-4	35.0	Skin Sens. 1 (H317) Carc. 2 (H351) STOT RE 1 (H372)
Iron	7439-89-6	EEC No. 231-096-4	32.94	-
Chromium	7440-47-3	EEC No. 231-157-5	21.0	-
Molybdenum	7439-98-7	EEC No. 231-107-2	3.0	Flam. Sol. 2 (H228)

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
approved class D extinguishers. Do not use water or foam.

Extinguishing media which must not be used for safety reasons
Water may be ineffective.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Metal oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. No special precautions required.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Should not be released into the environment. Do not allow material to contaminate ground water system.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Pick up and transfer to properly labelled containers.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry place. Keep away from acids.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)	Storage Class/LGK 6.1D
Switzerland - Storage of hazardous substances	Storage class - SC 6.1 https://www.kvu.ch/de/themen/stoffe-und-produkte https://www.kvu.ch/fr/themes/substances-et-produits https://www.kvu.ch/it/temi/sostanze-e-prodotti

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Nickel		STEL: 1.5 mg/m³ 15 min TWA: 0.5 mg/m³ 8 hr	TWA / VME: 1 mg/m³ (8 heures).	TWA: 1 mg/m³ 8 uren	TWA / VLA-ED: 1 mg/m³ (8 horas)

		Skin	TWA / VME: 1 mg/m³ (8 heures). metal gratings		
Chromium	TWA: 2 mg/m³ (8hr)	STEL: 1.5 mg/m³ 15 min TWA: 0.5 mg/m³ 8 hr	TWA / VME: 2 mg/m³ (8 heures). indicative limit	TWA: 0.5 mg/m³ 8 uren	TWA / VLA-ED: 2 mg/m³ (8 horas)
Molybdenum		STEL: 20 mg/m³ 15 min TWA: 10 mg/m³ 8 hr			TWA / VLA-ED: 10 mg/m³ (8 horas) TWA / VLA-ED: 3 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Nickel		TWA: 0.03 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 0.006 mg/m³ (8 Stunden). AGW - exposure factor 8	TWA: 1.5 mg/m³ 8 horas		TWA: 0.01 mg/m³ 8 tunteina
Chromium	TWA: 0.5 mg/m³ 8 ore. Time Weighted Average	TWA: 2 mg/m³ (8 Stunden). AGW - exposure factor 1	TWA: 0.5 mg/m³ 8 horas	TWA: 0.5 mg/m³ 8 uren	TWA: 0.5 mg/m³ 8 tunteina
Molybdenum			TWA: 10 mg/m³ 8 horas TWA: 3 mg/m³ 8 horas		TWA: 0.5 mg/m³ 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Nickel	TRK-KZGW: 2 mg/m³ 15 Minuten TRK-TMW: 0.5 mg/m³	TWA: 0.05 mg/m³ 8 timer STEL: 0.1 mg/m³ 15 minutter	TWA: 0.5 mg/m³ 8 Stunden	TWA: 0.25 mg/m³ 8 godzinach	TWA: 0.05 mg/m³ 8 timer STEL: 0.15 mg/m³ 15 minutter. value calculated
Chromium	MAK-TMW: 2 mg/m³ 8 Stunden	TWA: 0.5 mg/m³ 8 timer STEL: 1 mg/m³ 15 minutter	TWA: 0.5 mg/m³ 8 Stunden	TWA: 0.5 mg/m³ 8 godzinach	TWA: 0.5 mg/m³ 8 timer STEL: 1.5 mg/m³ 15 minutter. value calculated
Molybdenum	MAK-KZGW: 20 mg/m³ 15 Minuten MAK-TMW: 10 mg/m³ 8 Stunden		TWA: 10 mg/m³ 8 Stunden	STEL: 10 mg/m³ 15 minutach TWA: 4 mg/m³ 8 godzinach	TWA: 10 mg/m³ 8 timer

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Nickel	TWA: 0.05 mg/m³	TWA-GVI: 0.5 mg/m³ 8 satima.	TWA: 0.5 mg/m³ 8 hr. STEL: 1.5 mg/m³ 15 min		TWA: 0.5 mg/m³ 8 hodinách. respirable fraction of aerosol Ceiling: 1 mg/m³
Iron	TWA: 6.0 mg/m³				
Chromium	TWA: 2.0 mg/m³	TWA-GVI: 2 mg/m³ 8 satima. Cr	TWA: 2 mg/m³ 8 hr. STEL: 6 mg/m³ 15 min	TWA: 2 mg/m³	TWA: 0.5 mg/m³ 8 hodinách. dust Ceiling: 1.5 mg/m³
Molybdenum	TWA: 10.0 mg/m³				TWA: 5 mg/m³ 8 hodinách. Ceiling: 25 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Nickel	TWA: 0.5 mg/m³ 8 tundides.		TWA: 1 mg/m³	TWA: 0.01 mg/m³ 8 órában. AK	TWA: 0.05 mg/m³ 8 klukkustundum. Ni dust and powder Ceiling: 0.1 mg/m³ Ni dust and powder
Chromium	TWA: 2 mg/m³ 8 tundides.	TWA: 2 mg/m³ 8 hr	TWA: 1 mg/m³	TWA: 2 mg/m³ 8 órában. AK	TWA: 0.5 mg/m³ 8 klukkustundum. powder Ceiling: 1 mg/m³ powder
Molybdenum	TWA: 10 mg/m³ 8 tundides. total dust TWA: 5 mg/m³ 8 tundides. respirable dust				

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Nickel	TWA: 0.05 mg/m³	TWA: 0.5 mg/m³ IPRD			TWA: 0.1 mg/m³ 8 ore STEL: 0.5 mg/m³ 15 minute

Chromium	TWA: 2 mg/m³	TWA: 2 mg/m³ IPRD	TWA: 2 mg/m³ 8 Stunden	TWA: 2 mg/m³	TWA: 2 mg/m³ 8 ore
Molybdenum		TWA: 5 mg/m³ IPRD TWA: 10 mg/m³ inhalable fraction IPRD TWA: 5 mg/m³ respirable fraction IPRD			

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Nickel	MAC: 0.05 mg/m³	TWA: 0.5 mg/m³ 8 hodinách STEL: 0.05 mg/m³ 15 minútach	TWA: 0.006 mg/m³ 8 urah respirable fraction STEL: 0.048 mg/m³ 15 minutah respirable fraction	TLV: 0.5 mg/m³ 8 timmar. NGV	
Iron	TWA: 10 mg/m³ 1026	TWA: 6.0 mg/m³ total aerosol			
Chromium			TWA: 2 mg/m³ 8 urah inhalable fraction STEL: 2 mg/m³ 15 minutah inhalable fraction	TLV: 0.5 mg/m³ 8 timmar. NGV	TWA: 2 mg/m³ 8 saat
Molybdenum	TWA: 0.5 mg/m³ 1471 MAC: 3 mg/m³	TWA: 5 mg/m³ respirable fraction TWA: 10 mg/m³ inhalable fraction		TLV: 10 mg/m³ 8 timmar. NGV TLV: 5 mg/m³ 8 timmar. NGV	

Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Chromium			Total Chromium: 0.01 mg/g creatinine urine augmented during shift Total Chromium: 0.03 mg/g creatinine urine end of shift at end of workweek		

Component	Italy	Finland	Denmark	Bulgaria	Romania
Nickel		Nickel: 0.1 µmol/L urine after the shift after a working week or exposure period.		Nickel: 45 µg/L urine after several work shifts	Nickel: 3 µg/L urine end of shift
Chromium					Chromium: 10 µg/g Creatinine urine during working hours Chromium: 30 µg/g Creatinine urine end of work week

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Nickel		Nickel: 3 µg/L urine	Nickel: 0.03 mg/L blood end of exposure or work shift		
Chromium		Chromium: 10 µg/g Creatinine urine end of shift; end of work week			

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust
MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry
MDHS 99 Metals in air by ICP-AES

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Nickel 7440-02-0 (35.0)			DNEL = 0.035mg/cm2	

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Nickel 7440-02-0 (35.0)	DNEL = 11.9mg/m³		DNEL = 0.05mg/m³	DNEL = 0.05mg/m³
Iron 7439-89-6 (32.94)			DNEL = 3mg/m³	
Chromium 7440-47-3 (21.0)			DNEL = 0.5mg/m³	
Molybdenum 7439-98-7 (3.0)				DNEL = 11.7mg/m³

Predicted No Effect Concentration (PNEC)
See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Nickel 7440-02-0 (35.0)	PNEC = 7.1µg/L	PNEC = 109mg/kg sediment dw		PNEC = 0.33mg/L	PNEC = 29.9mg/kg soil dw
Chromium 7440-47-3 (21.0)	PNEC = 6.5µg/L	PNEC = 205.7mg/kg sediment dw			PNEC = 21.1mg/kg soil dw
Molybdenum 7439-98-7 (3.0)	PNEC = 12.7mg/L	PNEC = 22600mg/kg sediment dw		PNEC = 21.7mg/L	PNEC = 9.9mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Nickel 7440-02-0 (35.0)	PNEC = 8.6µg/L	PNEC = 109mg/kg sediment dw		PNEC = 0.12mg/kg food	
Molybdenum 7439-98-7 (3.0)	PNEC = 2.28mg/L	PNEC = 2368mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures
None under normal use conditions.

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection No special protective equipment required

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Disposable gloves	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing.

Respiratory Protection No special protective equipment required.

Large scale/emergency use In case of insufficient ventilation, wear suitable respiratory equipment

Small scale/Laboratory use No personal respiratory protective equipment normally required

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance	Grey - Silver	
Odor	Odorless	
Odor Threshold	No data available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	No information available	**Method -** No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	Not applicable	Solid
Water Solubility	Insoluble in water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Vapor Pressure	<=1100 hPa @ 50 °C	
Density / Specific Gravity	No data available	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

9.2. Other information

Evaporation Rate Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization No information available.
Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met
Dermal No data available
Inhalation No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nickel	LD50 > 9000 mg/kg (Rat)	-	LC50 > 10.2 mg/L (Rat) 1 h
Iron	7500 mg/kg (Rat)	-	-
Molybdenum	-	LD50 > 2000 mg/kg (Rat)	LC50 > 5.84 mg/L (Rat) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin Category 1

May cause sensitization by skin contact

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Nickel			Cat. 1	Group 2B

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 1

Route of exposure Inhalation
Target Organs Lungs.

(j) aspiration hazard; Not applicable
Solid

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects The product contains following substances which are hazardous for the environment. Contains a substance which is:. Very toxic to aquatic organisms. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Nickel	LC50: > 100 mg/L, 96h (Brachydanio rerio) LC50: = 1.3 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 10.4 mg/L, 96h static (Cyprinus carpio)	EC50 = 510 µg/L 96h	EC50 = 0.1 mg/L 72h EC50 = 0.18 mg/L 72h

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

Persistence Insoluble in water, May persist.

Degradability Not relevant for inorganic substances.

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate; Product has a high potential to bioconcentrate

Component	log Pow	Bioconcentration factor (BCF)
Chromium		1.03 - 1.22

12.4. Mobility in soil Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility.

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.
Switzerland - Waste Ordinance	Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600 https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories
Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Nickel	7440-02-0	231-111-4	-	-	X	X	KE-25818	X	-
Iron	7439-89-6	231-096-4	-	-	X	X	KE-21059	X	-
Chromium	7440-47-3	231-157-5	-	-	X	X	KE-05970	X	-
Molybdenum	7439-98-7	231-107-2	-	-	X	X	KE-25427	X	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Nickel	7440-02-0	X	ACTIVE	X	-	X	X	X
Iron	7439-89-6	X	ACTIVE	X	-	X	X	X
Chromium	7440-47-3	X	ACTIVE	X	-	X	X	X

Molybdenum	7439-98-7	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Nickel	7440-02-0	-	Use restricted. See item 27. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-
Iron	7439-89-6	-	-	-
Chromium	7440-47-3	-	Use restricted. See item 75. (see link for restriction details)	-
Molybdenum	7439-98-7	-	-	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Nickel	7440-02-0	Not applicable	Not applicable
Iron	7439-89-6	Not applicable	Not applicable
Chromium	7440-47-3	Not applicable	Not applicable
Molybdenum	7439-98-7	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals
Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .
Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Nickel	WGK 2	Class II : 0.5 mg/m³ (Massenkonzentration) Krebserzeugende Stoffe - Class II : 0.5 mg/m³ (Massenkonzentration)
Iron	nwg	
Chromium	nwg	Class III : 1 mg/m³ (Massenkonzentration)
Molybdenum	nwg	

Component	France - INRS (Tables of occupational diseases)
Iron	Tableaux des maladies professionnelles (TMP) - RG 44,RG 44bis,RG 94
Chromium	Tableaux des maladies professionnelles (TMP) - RG 10

Swiss Regulations
Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).
Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Nickel 7440-02-0 (35.0)	Prohibited and Restricted Substances		
Chromium 7440-47-3 (21.0)	Prohibited and Restricted Substances		

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure
H228 - Flammable solid
H400 - Very toxic to aquatic life

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (volatile organic compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method

Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Prepared By	Health, Safety and Environmental Department
Revision Date	20-Feb-2024
Revision Summary	New emergency telephone response service provider.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

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End of Safety Data Sheet