Safety Data Sheet

NST MIG/TIG high alloyed consumables, Mo

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Issue date: 11/17/2009 Revision date: 6/8/2121 Supersedes version of: 2/12/2016 Version: 4.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Article
Product name : NST MIG/TIG high alloyed consumables, Mo
Synonyms : NST MIG 309LSi, NST TIG 309LSi, NST MIG 307, NST MIG 309L Mo, NST TIG 309L Mo, NST MIG 316 LSi, NST TIG 316 LSi, NST MIG Duplex 2209, NST TIG Duplex 2209, NST MIG Superduplex 2594 , NST TIG Superduplex 2594, NST MIG 308LSi, NST TIG 308LSi

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

Relevant identified uses

Main use category : Professional use
Use of the substance/mixture : Weldign wire

Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Norsk Sveiseteknikk AS
Postboks 109, 3301 Hokksund
T + 47 99 27 80 00 - F + 47 32 82 90 19
Thomas@nst.no - nst.no

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Newcastle Unit)	Claremont Place Newcastle-upon-Tyne, Newcastle	+44 191 2606182 +44 191 2606180	Hours of operation: 24hrs

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Sens. 1	H317
Carc. 2	H351
STOT RE 1	H372

Full text of hazard classes, H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Alloy. According to EC directives or the corresponding national regulations there is no labelling obligation for this product.
No labelling applicable

2.3. Other hazards

Other hazards which do not result in classification : In the smoke emitted by use, there will be am additional risks if inhaled. Intensive exposure to welding fumes may cause lung disease, bronchitis, or worsen already existing inhalation problems. Intensified exposure to manganese (Mn) can damage the central nervous system or worsen existing health problems.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nickel (Note S)(Note 7)	(CAS-No.) 7440-02-0 (EC-No.) 231-111-4 (EC Index-No.) 028-002-00-7	9 – 11	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Manganese	(CAS-No.) 7439-96-5 (EC-No.) 231-105-1 (REACH-no) 01-2119449803-34	1 – 2.5	Not classified
silicon	(CAS-No.) 7440-21-3 (EC-No.) 231-130-8 (REACH-no) 01-2119480401-47	0.65 – 1	Not classified
Molybdenum	(CAS-No.) 7439-98-7 (EC-No.) 231-107-2 (REACH-no) 01-2119472304-43	< 0.3	Not classified
Copper	(CAS-No.) 7440-50-8 (EC-No.) 231-159-6	< 0.3	Not classified

Comments : During use, by-products are formed in the form of; Welding smoke, Cobalt (7440-48-4), Carbon monoxide (630-08-0), Chromium(VI) oxide (1333-82-0), OZONE (10028-15-6), Iron(III) oxide (1309-37-1), PHOSGENE (75-44-5), Nitrogen dioxide (10102-44-0). Limit values for these are given in section 8.1.

Note 7 : Alloys containing nickel are classified for skin sensitisation when the release rate of 0,5 µg Ni/cm2/week, as measured by the European Standard reference test method EN 1811, is exceeded.
Note S : This substance may not require a label according to Article 17 (see section 1.3 of Annex I) (Table 3.1). This substance may not require a label according to Article 23 of Directive 67/548/EEC (see section 8 of Annex VI to that Directive) (Table 3.2).
Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : General first aid, rest, warmth and fresh air. In all cases of doubt, or when symptoms persist, seek medical attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove victim immediately from source of exposure. Get medical attention if any discomfort continues.

First-aid measures after skin contact : Wash with plenty of soap and water. If burned, cool skin with ice or cold water. Burns must be treated by a physician. Get medical attention if any discomfort continues.

First-aid measures after eye contact : Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Ingestion is unlikely due to product's physical state.

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

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after inhalation : Overexposure to welding fumes may affect pulmonary function. Strong exposure to manganese may affect the nervous system. Inhalation of vapours may cause respiratory irritation.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after ingestion : Ingestion is unlikely due to product's physical state.

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

Electric shock: Disconnect and turn off the power. If the victim is conscious or has partial loss of consciousness, open the airways. If the breathing has stopped, give artificial respiration. If cardiac arrest, provide heart massage and artificial respiration.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. Foam, carbon dioxide or dry powder.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not regarded as a fire hazard under current legislation.

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO2). Metallic oxides. Toxic gases/vapours/fumes.

5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper personal protective equipment, including respiratory protection (EN137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer). Avoid contact with skin and eyes. Provide good ventilation.

6.1.1. For non-emergency personnel

Protective equipment : Wear appropriate personal protective equipment - see Section 8.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect all waste in suitable and labelled containers and dispose according to local legislation.

6.4. Reference to other sections

See section 13 for waste handling. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear appropriate personal protective equipment - see Section 8. Ensure adequate ventilation. Forced ventilation or exhaust vacuum for handling that generates dust, smoke, vapors or mist. Avoid breathing dust and fumes generated during processing, and insure adequate ventilation of the workplace.

Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from moisture.

Incompatible materials : Acids.

7.3. Specific end use(s)

No additional data. For professional use only.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Nickel (7440-02-0)	
United Kingdom - Occupational Exposure Limits	
Local name	Nickel

WEL TWA (OEL TWA) [1]	0.1 mg/m³ and its inorganic compounds (except nickel tetracarbonyl): water-soluble nickel compounds (as Ni) 0.5 mg/m³ and its inorganic compounds (except nickel tetracarbonyl): nickel and water insoluble nickel compounds (as Ni)
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), Carc (Capable of causing cancer and/or heritable genetic damage (nickel oxides and sulphides)), Sen (Capable of causing occupational asthma (nickel sulphate))
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Molybdenum (7439-98-7)	
United Kingdom - Occupational Exposure Limits	
Local name	Molybdenum
WEL TWA (OEL TWA) [1]	5 mg/m³ soluble compounds (as Mo) 10 mg/m³ insoluble compounds (as Mo)
WEL STEL (OEL STEL)	10 mg/m³ soluble compounds (as Mo) 20 mg/m³ insoluble compounds (as Mo)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

silicon (7440-21-3)	
United Kingdom - Occupational Exposure Limits	
Local name	Silicon
WEL TWA (OEL TWA) [1]	4 mg/m³ respirable dust 10 mg/m³ inhalable dust
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Copper (7440-50-8)	
United Kingdom - Occupational Exposure Limits	
Local name	Copper
WEL TWA (OEL TWA) [1]	1 mg/m³ and compounds, dusts and mists (as Cu) 0.2 mg/m³ fume (as Cu)
WEL STEL (OEL STEL)	2 mg/m³ and compounds, dusts and mists (as Cu)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Exposure limit values for the other components

Cobalt (7440-48-4)		
United Kingdom - Occupational Exposure Limits		
Local name	Cobalt	
WEL TWA (OEL TWA) [1]	0.1 mg/m³ and Cobalt compounds (as Co)	
Remark (WEL)	Carc (cobalt dichloride and sulphate)(Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), Sen (Capable of causing occupational asthma. See paragraphs 53–56)	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

carbon monoxide (630-08-0)		
United Kingdom - Occupational Exposure Limits		
Local name	Carbon monoxide	
WEL TWA (OEL TWA) [1]	23 mg/m³ 35 mg/m³ Limits applicable to underground mining & tunnelling industries ONLY until 21/8/23	

carbon monoxide (630-08-0)		
WEL TWA (OEL TWA) [2]	20 ppm 30 ppm Limits applicable to underground mining & tunnelling industries ONLY until 21/8/23	
WEL STEL (OEL STEL)	117 mg/m³ 232 mg/m³ Limits applicable to underground mining & tunnelling industries ONLY until 21/8/23	
WEL STEL (OEL STEL) [ppm]	100 ppm 200 ppm Limits applicable to underground mining & tunnelling industries ONLY until 21/8/23	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

Ozon (10028-15-6)		
United Kingdom - Occupational Exposure Limits		
Local name	Ozone	
WEL STEL (OEL STEL)	0.4 mg/m³	
WEL STEL (OEL STEL) [ppm]	0.2 ppm	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

ironoxide (1309-37-1)		
United Kingdom - Occupational Exposure Limits		
Local name	Iron oxide	
WEL TWA (OEL TWA) [1]	5 mg/m³ fume (as Fe) 4 mg/m³ Rouge, respirable 10 mg/m³ Rouge, total inhalable	
WEL STEL (OEL STEL)	10 mg/m³ fume (as Fe)	

phosgene; carbonyl chloride (75-44-5)		
United Kingdom - Occupational Exposure Limits		
Local name	Phosgene	
WEL TWA (OEL TWA) [1]	0.08 mg/m³	
WEL TWA (OEL TWA) [2]	0.02 ppm	
WEL STEL (OEL STEL)	0.25 mg/m³	
WEL STEL (OEL STEL) [ppm]	0.06 ppm	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

Applicable OEL and BLV for air contaminants : During use, by-products are formed in the form of; Welding smoke, Cobalt (7440-48-4), Carbon monoxide (630-08-0), Chromium(VI) oxide (1333-82-0), OZONE (10028-15-6), Iron(III) oxide (1309-37-1), PHOSGENE (75-44-5), Nitrogen dioxide (10102-44-0). Limit values for these are given in section 8.1.

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Provide eyewash station.

8.2.2. Personal protection equipment

Personal protective equipment:
Safety glasses. Gloves.

8.2.2.1. Eye and face protection

Eye protection:
Wear safety glasses with high protection against UV radiation. Chemical goggles or face shield. STANDARD EN 166:2001

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing. Wear thermal insulated gloves, shoes and other safety equipment designed for welding

Hand protection:
Wear suitable gloves. Heat-resistant glopves. STANDARD EN ISO 374-1:2016/A1:2018, EN ISO 374-2:2019, EN ISO 374-4:2019

8.2.2.3. Respiratory protection

Respiratory protection:
Respiratory protection must be used if air contamination exceeds acceptable level. Standard EN 143:2021

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Other information:
Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the protective equipment. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	copper.
Appearance	:	Wire.
Odour	:	None.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not available
Explosive limits	:	Not applicable
Lower explosive limit (LEL)	:	Not applicable
Upper explosive limit (UEL)	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	Not available
pH	:	Not available
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Solubility	:	The product is insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50 °C	:	Not available
Density	:	≈ 7 g/cm³
Relative density	:	Not available
Relative vapour density at 20 °C	:	Not applicable
Particle size	:	Not available
Particle size distribution	:	Not available
Particle shape	:	Not available
Particle aspect ratio	:	Not available

Particle aggregation state	:	Not available
Particle agglomeration state	:	Not available
Particle specific surface area	:	Not available
Particle dustiness	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Additional information	:	None to our knowledge.

SECTION 10: Stability and reactivity

10.1. Reactivity

No incompatible groups noted.

10.2. Chemical stability

Stable when used at recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Avoid high temperatures. Upon heating, toxic fumes are formed.

10.5. Incompatible materials

Acids. May liberate toxic gases.

10.6. Hazardous decomposition products

No decomposition if stored and used normally.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

Nickel (7440-02-0)	
LD50 oral rat	> 5000 mg/kg

Manganese (7439-96-5)	
LD50 oral rat	9000 mg/kg

silicon (7440-21-3)	
LD50 oral rat	3160 mg/kg

Skin corrosion/irritation	:	Not classified (Based on available data, the classification criteria are not met)
Additional information	:	Prolonged or repeated contact may cause skin to become dry or cracked
Serious eye damage/irritation	:	Not classified (Based on available data, the classification criteria are not met)
Additional information	:	Dust in the eyes causes risk of permanent eye damage.
Respiratory or skin sensitisation	:	May cause an allergic skin reaction. (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Overexposure to welding fumes may affect pulmonary function. Strong exposure to manganese may affect the nervous system
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	:	Not classified (Based on available data, the classification criteria are not met)

Additional information : Dust may irritate throat and respiratory system and cause coughing.

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Additional information : Overexposure to air contaminants may lead to their accumulation in the lungs. The severity of the change is proportional to the length of the exposure. TLong term exposure to welding and allied processes gasses, dusts and fumes may contribute to pulmonary irritation or pneumoconiosis. Long term overexposure to nickel fumes may also cause pulmonary fibrosis and edema. Chromium compounds have a corrosive action on the skin and mucous membranes. Liver damage and allergic skin rash have also been reported. Overexposure to manganese compounds may affect the central nervous system and is irreversible. Overexposure to copper fumes may lead to copper poisonin. Welding fumes (not otherwise specified) are possibly carcinogenic to humans.

Nickel (7440-02-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not regarded as dangerous to the environment. This does not, however, rule out the possibility that large or frequent smaller emissions of the product may be harmful to the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

Nickel (7440-02-0)	
LC50 - Fish [1]	> 100 mg/l (96 hours - Brachydanio rerio, zebra-fish)
EC50 - Crustacea [1]	> 100 mg/l Daphnia magna, 48 hours
EC50 72h - Algae [1]	0.18 mg/l Selenastrum capricornutum

Manganese (7439-96-5)	
LC50 - Fish [1]	2.91 mg/l (96 hours)
EC50 - Crustacea [1]	5.2 mg/l 48 hours
EC50 72h - Algae [1]	0.55 mg/l

Molybdenum (7439-98-7)	
LC50 - Fish [1]	2600 mg/l LC50 96 h - fish [mg/l]

12.2. Persistence and degradability

NST MIG/TIG high alloyed consumables, Mo	
Persistence and degradability	The product is not readily biodegradable.

12.3. Bioaccumulative potential

NST MIG/TIG high alloyed consumables, Mo	
Bioaccumulative potential	No data.

Nickel (7440-02-0)	
Bioconcentration factor (BCF REACH)	16
Partition coefficient n-octanol/water (Log Pow)	< 0

Manganese (7439-96-5)	
Bioconcentration factor (BCF REACH)	59052

Copper (7440-50-8)	
Bioconcentration factor (BCF REACH)	29

12.4. Mobility in soil

NST MIG/TIG high alloyed consumables, Mo	
Ecology - soil	The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

NST MIG/TIG high alloyed consumables, Mo
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects : None to our knowledge.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Product is not hazardous waste.
Waste treatment methods : Do not discharge into drains.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Additional information : The given LoW-code is a guiding, and the code depends on how the waste is formed. User must evaluate the choice of correct code.
European List of Waste (LoW) code : 12 01 13 - welding wastes

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID /

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

IBC code : No IBC-code for bulk transport offshore (MARPOL).

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substance on the REACH candidate list
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:			
Section	**Changed item**	**Change**	**Comments**
8.1	Grenseverdier (ppm)	Modified	

Full text of H- and EUH-statements:

Carc. 2	Carcinogenicity, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

The information in this safety data sheet is based on information from the manufacturer/supplier, present european and national legislation, and presupposes that the product is used within the specified area of application.