Safety Data Sheet
NST MMA INOX electrodes

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

1.1. Product identifier

Product name : NST MMA INOX electrodes

Synonyms : NST E 316L, NST E 309L, NST E 309MoL

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 : Welding wire

Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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Postboks 171, 3371 Vikersund
T + 47 99 27 80 00 - F + 47 32 82 90 19
nst.no

Contact person : Eyvind Røed (E.post: Eyvind@nst.no)

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number
United Kingdom	National Poisons Information Service (Newcastle Unit)	Claremont Place Newcastle-upon-Tyne, Newcastle	+44 191 2606182/+44 191 2606180 24H

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 and H-statements : see section 16

2.2. Label elements

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

2.3. Other hazards

Other hazards not contributing to the 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	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Iron	(CAS-No.) 7439-89-6 (EC-No.) 231-096-4 (REACH-no) 01-2119462838-24	40 - 90	Not classified
Chromium	(CAS-No.) 7440-47-3 (EC-No.) 231-157-5	10 - 30	Not classified
titanium dioxide	(CAS-No.) 13463-67-7 (EC-No.) 236-675-5 (REACH-no) 01-2119489379-17	5 - 20	Not classified
Calcium carbonate (natural)	(CAS-No.) 1317-65-3 (EC-No.) 215-279-6 (REACH-no) N/A	10 - 15	Not classified
Nickel	(CAS-No.) 7440-02-0;7440-02-0 (EC-No.) 231-111-4	5 - 15	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Quartz (SiO2)	(CAS-No.) 14808-60-7 (EC-No.) 238-878-4 (REACH-no) N/A	1 - 10	Not classified
kalsiumfluorid	(CAS-No.) 7789-75-5 (EC-No.) 232-188-7 (REACH-no) 01-2119491248-30	1 - 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
Molybdate	(CAS-No.) 7439-98-7 (EC-No.) 231-107-2 (REACH-no) 01-2119472304-43	0.1 - 5	Not classified
Manganese	(CAS-No.) 7439-96-6 (EC-No.) 231-105-1 (REACH-no) 01-2119449803-34	0.1 - 2	Not classified

Full text of H-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. Move to fresh air. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. Artificial respiration if indicated.

First-aid measures after skin contact : Wash skin with soap and water. Get medical attention if irritation persists after washing. If burned, cool skin with ice or cold water.

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. Get medical attention if any discomfort continues.

First-aid measures after ingestion : Rinse nose, mouth and throat with water.

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

Symptoms/effects after inhalation : Overexposure to welding fumes may affect pulmonary function. Strong exposure to manganese may affect the nervous system.

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.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Non flammable.

Hazardous decomposition products in case of fire : Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide. Oxides of: Iron. Manganese. Titanium. Silicon. Magnesium. Molybdenum (Mo). Ozone. Boron (B). Chromium. Fluorine (F). Nickel (Ni).

5.3. Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation, especially in confined areas. Avoid contact with skin and eyes. Do not breathe vapour.

For non-emergency personnel

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

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Do not discharge into drains.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Limit spread of spilled material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Mechanical ventilation or local exhaust ventilation is required. Do not breathe dust, fume, vapours. Avoid contact with skin and eyes. Do not touch electrical parts, such as welding wire and welding machine terminals. Wear appropriate personal protective equipment - see Section 8.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry place.

Incompatible materials : Acids.

Maximum storage period : < 36 months

Storage temperature : 17 - 25 °C

7.3. Specific end use(s)

No additional data.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Manganese (7439-96-6)		
EU	Local name	Manganese
EU	IOELV TWA (mg/m³)	0.2 mg/m³ (inhalable fraction) 0.05 mg/m³ (respirable fraction)
EU	Notes	SCOEL Recommendations (2011)
United Kingdom	Local name	Manganese
United Kingdom	WEL TWA (mg/m³)	0.5 mg/m³ and its inorganic compounds (as Mn)
Iron (7439-89-6)		
United Kingdom	Local name	Iron oxide
United Kingdom	WEL TWA (mg/m³)	5 mg/m³ fume (as Fe) 4 mg/m³ Rouge, respirable 10 mg/m³ Rouge, total inhalable
United Kingdom	WEL STEL (mg/m³)	10 mg/m³ fume (as Fe)
Calcium carbonate (natural) (1317-65-3)		
United Kingdom	Local name	Calcium carbonate
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ inhalable dust 4 mg/m³ respirable 4 mg/m³ Limestone, respirable 10 mg/m³ Limestone, total inhalable 4 mg/m³ Marble, respirable 10 mg/m³ Marble, total inhalable
Quartz (SiO2) (14808-60-7)		
EU	Local name	Silica crystaline (Quartz)
EU	Notes	SCOEL Recommendations (2003)
United Kingdom	Local name	Silica
United Kingdom	WEL TWA (mg/m³)	0.1 mg/m³ respirable crystalline
titanium dioxide (13463-67-7)		
EU	Local name	Titanium dioxide
EU	Notes	SCOEL Recommendations (Ongoing)
United Kingdom	Local name	Titanium dioxide

titanium dioxide (13463-67-7)		
United Kingdom	WEL TWA (mg/m³)	4 mg/m³ respirable 10 mg/m³ total inhalable

Chromium (7440-47-3)		
EU	Local name	Chromium metal
EU	IOELV TWA (mg/m³)	2 mg/m³
United Kingdom	Local name	Chromium
United Kingdom	WEL TWA (mg/m³)	0.5 mg/m³ 0.5 mg/m³ Chromium (II) compounds (as Cr) 0.5 mg/m³ Chromium (III) compounds (as Cr) 0.05 mg/m³ Chromium (VI) compounds (as Cr)
United Kingdom	Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), Sen (Capable of causing occupational asthma. See paragraphs 53–56), BMGV (Biological monitoring guidance values are listed in Table 2)

Molybdate (7439-98-7)		
United Kingdom	Local name	Molybdenum
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ insoluble compounds (as Mo) 5 mg/m³ soluble compounds (as Mo)
United Kingdom	WEL STEL (mg/m³)	20 mg/m³ insoluble compounds (as Mo) 10 mg/m³ soluble compounds (as Mo)

Nickel (7440-02-0;7440-02-0)		
EU	Local name	Nickel metal
EU	IOELV TWA (mg/m³)	0.005 mg/m³ (respirable fraction) 0.01 mg/m³ (inhalable fraction)
EU	Notes	SCOEL Recommendations (2011)
United Kingdom	Local name	Nickel
United Kingdom	WEL TWA (mg/m³)	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)
United Kingdom	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 (nickel oxides and sulphides)(Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), Sen (nickel sulphate)(Capable of causing occupational asthma. See paragraphs 53–56)

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station. Provide eyewash station. Working operations which cause formation of high volumes of vapour should take place in ventilation hood or with local exhaust ventilation. It is forbidden to weld in rooms where there are halogenated solvents in the working atmosphere.

Personal protective equipment : Gloves. Safety glasses.

Materials for protective clothing : Heatproof clothing

Hand protection : Gloves made of insulating material. Heat-resistant glopves. EN 388. Chemical resistant gloves required for prolonged or repeated contact. STANDARD EN 374.

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

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

Respiratory protection : During welding supplied-air respirator or motor assisted respirators with P2 or P3-filter should be used in combination with brown, yellow and gray gas filter. Respiratory protection should be used in conjunction with welding hood. Standard EN 143. STANDARD EN 149. EN 405. EN 139

Other information : Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the protective equipment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Wire.
Colour	: According to product specification.
Odour	: Odourless or no characteristic odour.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: > 1100 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Not soluble in water. Soluble in: Strong acids.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

Additional information : None to our knowledge.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No incompatible groups noted.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Water, humidity.

10.5. Incompatible materials

Acids.

10.6. Hazardous decomposition products

The most ordinary chimney gases include: Carbon dioxide. Ozone. Oxides of: Iron. Manganese. Silicon (Si).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity : Not classified

Based on available data, the classification criteria are not met

Manganese (7439-96-6)	
LD50 oral rat	9000 mg/kg

Iron (7439-89-6)	
LD50 oral rat	30000 mg/kg

Calcium carbonate (natural) (1317-65-3)	
LD50 oral rat	> 2000 mg/kg

Calcium carbonate (natural) (1317-65-3)	
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 3 mg/l/4h

titanium dioxide (13463-67-7)	
LD50 oral rat	> 100000 mg/kg

Chromium (7440-47-3)	
LD50 oral rat	19.8 mg/m³

kalsiumfluorid (7789-75-5)	
LD50 oral rat	4250 mg/kg

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

Skin corrosion/irritation : Not classified

Based on available data, the classification criteria are not met

Serious eye damage/irritation : Not classified

Dust from this product may cause eye irritation
Vapor may irritate eyes

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Suspected of causing cancer.

Prolonged and repeated inhalation of welding fumes may cause an increased risk of developing lungrelated cancers.

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

STOT-single exposure : Not classified

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.
Inhalation of fumes or vapours may cause respiratory irritation

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

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Manganese (7439-96-6)	
LC50 fish 1	2.91 mg/l (96 hours)
EC50 Daphnia 1	5.2 mg/l 48 hours
IC50 algae	0.55 mg/l (IC50, 72 hours)

Iron (7439-89-6)	
LC50 fish 1	13.6 mg/l 96h (FeCl2) Morone saxatilis
EC50 Daphnia 1	5.2 mg/l 48h
IC50 algae	0.1 mg/l 72h

titanium dioxide (13463-67-7)	
LC50 fish 1	> 1000 mg/l Fundulus heteroclitus
EC50 Daphnia 1	> 1000 mg/l (48 hours - Daphnia magna)

kalsiumfluorid (7789-75-5)	
IC50 algae	2 mg/l

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

Nickel (7440-02-0;7440-02-0)	
LC50 fish 1	> 100 mg/l (96 hours - Brachydanio rerio, zebra-fish)
EC50 Daphnia 1	> 100 mg/l Daphnia magna, 48 hours
IC50 algae	0.18 mg/l (IC50, 72 hours - Selenastrum capricornutum)

12.2. Persistence and degradability

NST MMA INOX electrodes	
Persistence and degradability	The product is not biodegradable.

Iron (7439-89-6)	
Persistence and degradability	There are no data on the degradability of this product.

12.3. Bioaccumulative potential

NST MMA INOX electrodes	
Bioaccumulative potential	No data available on bioaccumulation.

Manganese (7439-96-6)	
Bioconcentration factor (BCF REACH)	59052

Iron (7439-89-6)	
Bioconcentration factor (BCF REACH)	140000

kalsiumfluorid (7789-75-5)	
Bioconcentration factor (BCF REACH)	7.5

Nickel (7440-02-0;7440-02-0)	
Bioconcentration factor (BCF REACH)	16
Log Pow	< 0

12.4. Mobility in soil

NST MMA INOX electrodes	
Ecology - soil	The product is insoluble in water.

Iron (7439-89-6)	
Ecology - soil	The product is water soluble and may spread in water systems.

12.5. Results of PBT and vPvB assessment

NST MMA INOX electrodes
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

Component	
Iron (7439-89-6)	This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : None to our knowledge.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Regional legislation (waste) : Dispose as hazardous waste.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a hazardous or special waste collection point.

European List of Waste (LoW) code : 12 01 13 - welding wastes
12 01 14* - machining sludges containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

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

14.1. UN number
Not regulated for transport
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
No supplementary information available

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: REGULATORY INFORMATION

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

EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

27. Nickel	NST MMA INOX electrodes - Nickel

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

National regulations

EC-regulation 2015/830 /EC, 1907/2006/EC (REACH), 1272/2008/EC (CLP), 790/2009/EC. Transport of dangerous goods (ADR/RID, IMDG, IATA/ICAO). Workplace exposure limits.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: OTHER INFORMATION

Indication of changes:
Regulatory information. Composition/information on ingredients.

2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.1	Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]	Removed	
2.2	Labelling according to Regulation (EC) No. 1272/2008 [CLP]	Removed	
3.2	Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]	Removed	
3.2	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	

Data sources : EC-regulation 2015/830 /EC, 1907/2006/EC (REACH), 1272/2008/EC (CLP), 790/2009/EC. Transport of dangerous goods (ADR/RID, IMDG, IATA/ICAO). Workplace exposure limits.

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Signature : A. Åsebø Murel

Full text of H- and EUH-statements:

Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H335	May cause respiratory irritation
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.