SAFETY DATA SHEET
NST INOX flux cored wires

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

1.1. Product identifier

Product name NST INOX flux cored wires

Synonyms, trade names NST A-316L / A-309MoL / A-309L / A-308L/FCW A625 / 316LT/309MoLT / 309LT/308LT / 329J3L Duplex / NST 329J3L Duplex / NST 329J3L XLT Duplex

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

Applications Welding wire

1.3. Details of the supplier of the safety data sheet

Supplier

Norsk Sveiseteknikk AS
Postboks 575
NO-3002 Drammen, Norway
Tel: +47 99 27 80 00
Fax: +47 32 82 90 19
E-mail: nst@nst.no
www.nst.no

Contact person Eyvind Røed (E-mail: eyvind@nst.no)

1.4. Emergency telephone number

Emergency telephone number 112 / The UK National Poisons Emergency number: +44 870 600 6266

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to directives 67/548/EEC, 99/45/EC & 2001/58/EC (DSD/DPD)

Xn, R-40
Xi, R-43
T, R-48/23

Classification according to directive 1272/2008 (CLP)

GHS08, GHS07, Danger
Skin Sens. 1: H317
Carc. 2: H351
STOT RE 1: H372

Hazard Metals in massive form and alloy do not require a label according to EU-Regulation 1272/2008, section 1.3.4.

2.2. Label elements

CLP

Hazard pictograms

Signal word Danger

Hazard statements
Skin Sens. 1: H317 May cause an allergic skin reaction.
Carc. 2: H351 Suspected of causing cancer .
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure .

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

Contains
nickel (Ni)
manganese (Mn)

2.3. Other hazards

Meets the criteria for vPvB No.

Meets the criteria for PBT No.

Other hazards which do not contribute to classification No known risks.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Ingredients

Name	EC No.	CAS No.	Content	Symbol	Classification
iron (Fe)	231-095-1	7439-89-6	45-90 %	-	
chromium (Cr)	231-157-5	7440-47-3	10-40 %	-	
titanium dioxide	236-675-5	13463-67-7	5-15 %	-	
quarz (SiO2)	238-878-4	14808-60-7	5-15 %	-	
nickel (Ni)	231-111-4	7440-02-0	5-15 %	T	R-40, R-43, R-48/23
zirconium dioxide	215-227-2	1314-23-4	3-9 %	-	
aluminium (III)oxide	215-691-6	1344-28-1	2-8 %	-	
molybdenum (Mo)	231-107-2	7439-98-7	<4 %	-	
manganese (Mn)	231-105-1	7439-96-5	<2,5 %	-	
silicon (Si)	231-130-8	7440-21-3	<1,5 %	-	

CLP

Name	REACH No.	Content	Symbol	Classification	CAS No.
iron (Fe)	01-2119462838-24	45-90 %			7439-89-6
chromium (Cr)	01-2119485652-31	10-40 %			7440-47-3
titanium dioxide	01-2119489379-17	5-15 %			13463-67-7
quarz (SiO2)		5-15 %			14808-60-7
nickel (Ni)	01-2119438727-29	5-15 %	GHS08, GHS07, , Danger	Skin Sens. 1: H317, Carc. 2: H351, STOT RE 1: H372	7440-02-0
zirconium dioxide	01-2119486976-14	3-9 %			1314-23-4
aluminium (III)oxide	01-2119817795-27	2-8 %			1344-28-1
molybdenum (Mo)	01-2119472304-43	<4 %			7439-98-7
manganese (Mn)	01-2119449803-34	<2,5 %			7439-96-5
silicon (Si)	01-2119480401-47	<1,5 %			7440-21-3

Composition comments By classification of the solid product is only the properties of physical contact and environment included. In the smoke emitted by use, there will be an additional risk by inhalation. Intensive exposure to welding fumes can 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.

Section 16 contains detailed classification phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

General Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Get medical attention.

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

Specific first aid treatment Electric shock: Disconnect and turn off power. If the victim is semi- or unconscious, open the airway. If the victim cannot breath, give artificial respiration. If there is no pulse, massage the chest and apply artifical respiration.

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

Inhalation Move the exposed person to fresh air at once. Get medical attention if any discomfort continues. Alternatively artificial respiration.

Ingestion Rinse nose, mouth and throat with water.

Skin Wash skin with soap and water. At burns, cool skin with ice or cold water.
Get medical attention if any discomfort continues.

Eyes Rinse with water. Contact physician if discomfort continues. Make sure to remove any contact lenses from the eyes before rinsing. Do not rub eye.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Extinguishing media Use extinguishing media appropriate for surrounding fire.

Special fire fighting procedures Avoid breathing fire vapours.

5.2. Special hazards arising from the substance or mixture

Specific hazards Non-flammable.

Hazardous combustion products Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO_2). Oxides of Chromium, Fluorine, Iron, Manganese, Molybdenium, Nickel, Silicon, Titanium, Carbon and Ozone.

5.3. Advice for firefighters

Protective measures in fire Firefighters exposed to combustion gases/decomposition products should use a respiratory protective device.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection Ventilate the area and avoid breathing vapours. Use requisite protective equipment - refer to section 8. Avoid contact with skin, eyes and inhalation of vapours.

6.2. Environmental precautions

Environmental protection Prevent discharge of larger quantity to drain.

6.3. Methods and material for containment and cleaning up

Spill cleanup methods Limit spread of spilled material. Prevent discharge to drainage systems. Carefully collect larger quantities into closed container.

6.4. Reference to other sections

See section 13 for waste handling.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Provide good ventilation. Use mechanical ventilation in case of handling which causes formation of vapours.
Avoid inhalation of vapours. Avoid spilling, skin and eye contact.
Do not touch live electrical parts such as the welding wire and welding machine terminals.
Wear insulated gloves and safety boots.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep in cool, dry, ventilated storage and closed containers. Keep away from moisture.

7.3. Specific end use(s)

Specific use(s) Contact supplier for more information.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ingredient name	CAS no.	Reference	LT Exp 8 Hrs	ST Exp 15 Min	Date
chromium (Cr)	7440-47-3	WEL.	0,5 mg/m3		
titanium dioxide	13463-67-7	WEL.	10 mg/m3		
quarz (SiO_2)	14808-60-7	WEL.	0,1 mg/m3		
nickel (Ni)	7440-02-0	WEL.	0.5 mg/m3(Sk)		
zirconium dioxide	1314-23-4	WEL.	5 (as Zr) mg/m3		
aluminium (III)oxide	1344-28-1	WEL.	10/4 mg/m³, inhalable/respirable dust		
molybdenum (Mo)	7439-98-7	WEL.	10 mg/m3	20 mg/m3	
manganese (Mn)	7439-96-5	WEL.	0,5 mg/m3		
silicon (Si)	7440-21-3	WEL.	10 / 4 mg/m³, inhalable/respirable dust		

Ingredient comments WEL = Workplace exposure limits. SK= Skin absorbance, Rep= Reproduction, Carc= Carcinogenic, Senz= Sensitisers, Mut= Carcinogenic

Protective equipment


Process conditions	Provide eyewash station. It is forbidden to weld in rooms with halogenated solvents in the working athmosphere.
Ventilation	Well ventilated area. Working operations which cause formation of high volumes of vapour should take place in ventilation hood or with local exhaust ventilation.

8.2. Exposure controls

Respirators	At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Protective gloves	Chemical resistant gloves required for prolonged or repeated contact. Wear insulated protection gloves designed for welding.
Eye protection	Wear approved safety glasses with high protection factor against UV-radiation. Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the weld zone. Then go to the next lighter shade which gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.
Other Protection	Wear appropriate clothing to prevent any possibility of skin contact. Wear earplugs or earmuffs when using engine or pulsed driven arc welding machines that generates high-level noise.
Hygienic work practices	Wash at the end of each work shift and before eating, smoking and using the toilet. Eating, smoking and water fountains prohibited in immediate work area.
DNEL	No data.
PNEC	No data.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Wire
Colour	Metallic.
Odour	Odourless or no characteristic odour.
Solubility description	Insoluble in water.

9.2. Other information

Safety information	Not known.

SECTION 10: Stability and reactivity

10.1. Reactivity

No incompatible groups noted.

10.2. Chemical stability

Stable at recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerisation	Will not polymerise.

10.4. Conditions to avoid

Water, moisture.

10.5. Incompatible materials

Materials to avoid	Acids, may generate gases.

10.6. Hazardous decomposition products

Hazardous decomp. products	Hazard decomposition products includes those from the volatilization, reaction or oxidation of the materials listed in the composition, and those from the base metal and coating.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Sensitization	May cause allergic skin reaction.
Genotoxicity	No known heritable or mutagenic effects.
Carcinogenicity	Limited evidence of a carcinogenic effect. Long term and repeated inhalation of gases from welding may pose and increased risk of aqquiring cancer related lung diseases.
Reproduction toxicity	No known hazardous effects on reproduction, fertility or to the unborn child.
Toxicological information	The product in its normal state represents no toxic risks, but the smoke emitted by welding poses an additional risk by inhalation. Overexposure to welding fumes may result in symptons like dizziness, nausea, dryness or irritation of the nose, throat and eyes.
Inhalation	Toxic: danger of serious damage to health by prolonged exposure through inhalation. Gas or vapour in high concentrations may irritate respiratory system. Overexposure to welding fumes may affect pulmonary function. Overexposure to manganese may affect the nervous system.
Ingestion	Ingestion is not a likely route of exposure, the product is supplied as an wire.
Skin	Prolonged or repeated contact leads to drying of skin.
Eyes	Vapour, spray or dust may cause chronic eye irritation or eye damage.
COMPONENT:	**iron (Fe)**
Toxic dose - LD50:	30000 mg/kg (oral rat)
COMPONENT:	**titanium dioxide**
Toxic dose - LD50:	10000 mg/kg (oral rat)
Toxic dose - LD50 (skin):	>10000 mg/kg (skin rabbit)
Toxic conc. - LC50:	>4,68 mg/l/4h (inhalation rat)
COMPONENT:	**nickel (Ni)**
Toxic dose - LD50:	>5000 mg/kg (oral rat)
Toxic dose - LD50 (skin):	>2000 mg/kg (skin rabbit)
COMPONENT:	**zirconium dioxide**
Toxic dose - LD50:	>8800 mg/kg (oral mouse)
COMPONENT:	**aluminium (III)oxide**
Toxic dose - LD50:	>5000 mg/kg (oral rat)
COMPONENT:	**manganese (Mn)**
Toxic dose - LD50:	9000 mg/kg (oral rat)
COMPONENT:	**silicon (Si)**
Toxic dose - LD50:	3160 mg/kg (oral rat)

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	No negative effects on the aquatic environment are known.

12.2. Persistence and degradability

The chemical is not readily biodegradable.

12.3. Bioaccumulative potential

Not relevant, inorganic components.

12.4. Mobility in soil

Mobility	Insoluble in water.

12.5. Results of PBT and vPvB assessment

PTB/vPvB	Component(s) is not identified as PBT or vPvB substance(s).

12.6. Other adverse effects

No known adverse affects.

COMPONENT:	**iron (Fe)**
LC 50, 96 Hrs, Fish mg/l:	13,6 (Morone saxatilis, FeCl2)
EC 50, 48 Hrs, Daphnia, mg/l:	5,2 (Daphnia magna)
IC 50, 72 Hrs, Algae, mg/l:	0,1
Bioaccumulative potential	BCF:140000
COMPONENT:	**chromium (Cr)**
LC 50, 96 Hrs, Fish mg/l:	3,4 (Oncorhynchus mykiss)
EC 50, 48 Hrs, Daphnia, mg/l:	0,02 (Daphnia pulex)
IC 50, 72 Hrs, Algae, mg/l:	0,001
Bioaccumulative potential	BCF:200
COMPONENT:	**titanium dioxide**
LC 50, 96 Hrs, Fish mg/l:	> 1000 (Fundulus heteroclitus)
EC 50, 48 Hrs, Daphnia, mg/l:	>1000 (Daphnia magna)
COMPONENT:	**nickel (Ni)**
LC 50, 96 Hrs, Fish mg/l:	>100 (Brachydanio rerio)
EC 50, 48 Hrs, Daphnia, mg/l:	>100 (Daphnia magna)
IC 50, 72 Hrs, Algae, mg/l:	0,18 (Selenastrum capricornutum)
Bioaccumulative potential	BCF:16
Partition coefficient (log Pow)	<0
COMPONENT:	**aluminium (III)oxide**
LC 50, 96 Hrs, Fish mg/l:	>100 (Salmo trutta)
EC 50, 48 Hrs, Daphnia, mg/l:	>100 (Daphnia Magna)
IC 50, 72 Hrs, Algae, mg/l:	>100 (Selenastrum capricornutum)
COMPONENT:	**manganese (Mn)**
LC 50, 96 Hrs, Fish mg/l:	2,91
EC 50, 48 Hrs, Daphnia, mg/l:	5,2 (Daphnia magna)
IC 50, 72 Hrs, Algae, mg/l:	0,55
Bioaccumulative potential	BCF:59052

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General/cleaning	Waste is classified as hazardous waste.
Disposal methods	Do not allow runoff to sewer, waterway or ground.
Waste class	12 01 13 welding wastes

SECTION 14: Transport information

General	No dangerous goods (ADR/RID, IMDG, IATA/ICAO)

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

TRANSPORT BY INLAND WATERWAYS (ADN):

14.4. Packing group

14.5. Environmental hazards

Transport by inland waterways notes	Not applicable.

14.6. Special precautions for user

No particular precautions.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the 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

EU directives EC-regulation 453/2010/EC, 1907/2006/EC (REACH), 1272/2008/EC (CLP), 790/2009/EC. Tranport of dangerous goods (ADR/RID, IMDG, IATA/ICAO). Workplace exposure limits.

15.2. Chemical safety assessment

Chemical Safety Assessment Chemical Safety Report (CSR) has not been carried out for this product.

SECTION 16: Other information

Explanations to R-phrases in section 3 R-40 Limited evidence of a carcinogenic effect.
R-43 May cause sensitisation by skin contact.
R-48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Explanations to classification in section 3 H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer .
H372 Causes damage to organs through prolonged or repeated exposure .

DSD/DPD

Labeling T

Risk phrases R-40 Limited evidence of a carcinogenic effect.
R-43 May cause sensitisation by skin contact.
R-48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases S-24 Avoid contact with skin.
S-37 Wear suitable gloves.
S-38 In case of insufficient ventilation, wear suitable respiratory equipment.
S-41 In case of fire and/or explosion do not breathe fumes.
S-51 Use only in well-ventilated areas.

*** Information revised since the previous version of the SDS**

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