

SAFETY DATA SHEET

NSWE SF-1A

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

1.1. Product identifier

Trade name: NSWE SF-1A

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

Relevant identified uses of the substance or mixture: Welding wire
Restricted to professional and industrial use.

Uses advised against : None known.

1.3. Details of the supplier of the safety data sheet

Company and address: **Norsk Sveiseteknikk AS**
Postboks 109
3301 Hokksund
Norway
T + 47 99 27 80 00
nst.no

Contact person:

E-mail: thomas@nst.no

Revision: 20/04/2026

SDS Version: 3.0

1.4. Emergency telephone number

Healthcare professionals: Dial 0344 892 0111 to reach The National Poisons Information Service (NPIS) (24 hour service)

General public:

England - Dial 111 to reach NHS 111 (24 hour service)

Scotland - Dial 111 to reach NHS 24 (24 hour service)

Wales - Dial 111 or 0845 4647 to reach NHS Direct (24 hour service)

See section 4 "First aid measures".

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

This product is exempted from labelling requirements as it is marketed in a massive form not presenting a hazard to the aquatic environment or to human health by inhalation, ingestion or contact with the skin.

2.2. Label elements

Hazard pictogram(s): Not applicable.

Signal word: Not applicable.

Hazard statement(s): Not applicable.

Not applicable.

Precautionary statement(s):

General Not applicable.

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Hazardous substances: None known.

Additional labelling: Alloys in solid form are not required to be labeled according to the CLP regulation (1272/2008), Art. 23(d) and Annex I 1.3.4. These complex alloys in solid form have no known toxicological properties other than causing allergic reactions in individuals sensitive to the

metals in the alloys. Hazardous fumes or dust emissions may be released during remelting, grinding, cutting, or welding.

2.3. Other hazards

In the smoke emitted during use, there will be an 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.

Additional warnings: This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.
This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Iron	CAS No.: 7439-89-6 EC No.: 231-096-4 UK-REACH: 01-2119462838-24 Index No.:	< 100%		
Titanium dioxide	CAS No.: 13463-67-7 EC No.: 236-675-5 UK-REACH: 01-2119489379-17 Index No.: 022-006-00-2	< 10%		
Manganese	CAS No.: 7439-96-5 EC No.: 231-105-1 UK-REACH: 01-2119449803-34 Index No.:	<5%		
Zirconium compounds (as Zr)	CAS No.: 1314-23-4 EC No.: 215-227-2 UK-REACH: 01-2119486976-14 Index No.:	< 1%		
Sodium fluoride	CAS No.: 7681-49-4 EC No.: 231-667-8 UK-REACH: 01-2119539420-47 Index No.: 009-004-00-7	< 1%	EUH032 Acute Tox. 3, H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319	
Aluminium	CAS No.: 7429-90-5 EC No.: 231-072-3 UK-REACH: 01-2119529243-45 Index No.:	< 1%	Flam. Sol. 1, H228 Water-react. 2, H261	[20]
Copper	CAS No.: 7440-50-8 EC No.: 231-159-6 UK-REACH: 01-2119480154-42 Index No.:	< 1%	Aquatic Chronic 2, H411	
Silicon	CAS No.: 7440-21-3 EC No.: 231-130-8 UK-REACH: 01-2119480401-47 Index No.:	<1%		
Aluminium(III)oxide	CAS No.: 1344-28-1 EC No.: 215-691-6 UK-REACH: Index No.:	<1%		
Magnesium	CAS No.: 7439-95-4 EC No.: 231-104-6 UK-REACH: 01-2119537203-49 Index No.: 012-002-00-9	<1%	Pyr. Sol. 1, H250 Water-react. 1, H260	[20]
Silicon dioxide	CAS No.: 14808-60-7 EC No.: 643-043-6	<1%		

UK-REACH:
Index No.:

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

[20] The physical hazards of the substance will not be taken into account as this substance is marketed in a form, which does not have the physical hazards indicated by the classification in the entry in Part 3 of the CLP Regulation (Annex VI, note T).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information: In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.
Contact a doctor if in doubt about the injured person's condition or if the symptoms persist.
Never give an unconscious person water or other drink.
The following first aid measures apply in case of contact with the product in molten form.

Inhalation: Remove victim to fresh air. Call a POISON CENTER/doctor if you feel unwell. Give artificial respiration if necessary.

Skin contact: Wash skin with soap and water. Seek medical attention if irritation persists after washing. For burns, cool skin with ice or cold water.

Eye contact: Immediately flush with plenty of water for up to 15 minutes. Remove contact lenses, if present, and open the eye wide. Consult a physician if all discomfort persists. In case of burns: consult a physician immediately.

Ingestion: Rinse nose, mouth and throat with water. In case of burns: consult a doctor immediately.

Burns: Not applicable.

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

In the smoke emitted during use, there will be an 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.

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.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Non flammable.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Fluorides, oxides of iron, manganese, aluminum, titanium, copper, zirconium, and silicon.

5.3. Advice for firefighters

Do not enter the fire area without proper personal protective equipment, including self-contained breathing apparatus (EN137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.
Avoid contact with skin and eyes. Avoid inhalation of welding fumes.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

6.3. **Methods and material for containment and cleaning up**

Limit spillage, sweep up and shovel into appropriate containers for disposal. Store in suitable, closed containers for disposal.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. **Reference to other sections**

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. **Precautions for safe handling**

Ensure good ventilation of the work station. Mechanical ventilation or local exhaust ventilation is required. Avoid breathing vapours, fume. Avoid contact with skin and eyes. Do not touch electrical parts, such as welding wire and welding machine terminals.

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. **Conditions for safe storage, including any incompatibilities**

Recommended storage material: Always store in containers of the same material as the original container.

Storage conditions: Store in a dry place.
Protect from moisture.

Incompatible materials: Acids

7.3. **Specific end use(s)**

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**

Iron

Long term exposure limit (8 hours) (mg/m³): 5 mg/m³ fume (as Fe) / 10 mg/m³ fume (as Fe)

Titanium dioxide

Long term exposure limit (8 hours) (mg/m³): 10(inhalable)/4(respirable)

Manganese

Long term exposure limit (8 hours) (mg/m³): 0,2 (inhalable fraction as Mn) / 0,05 (respirable fraction as Mn)

Zirconium compounds (as Zr)

Long term exposure limit (8 hours) (mg/m³): 5 (Compounds, as Zr)

Short term exposure limit (15 minutes) (mg/m³): 10 (Compounds, as Zr)

Aluminium

Long term exposure limit (8 hours) (mg/m³): 10(inhalable)/4(respirable)

Copper

Long term exposure limit (8 hours) (mg/m³): 0,2(fume)/1(dust) (as Cu) / 1 mg/m³ and compounds, dusts and mist (as Cu)

Short term exposure limit (15 minutes) (mg/m³): 2 (dusts, mists) (as Cu)

Silicon

Long term exposure limit (8 hours) (mg/m³): 10(inhalable) / 4(respirable)

Silicon (Si)

Long term exposure limit (8 hours) (mg/m³): 10(inhalable)/4(respirable)

Aluminium(III)oxide

Long term exposure limit (8 hours) (mg/m³): 10(inhalable)/4(respirable)

Magnesium

Long term exposure limit (8 hours) (mg/m³): 4 mg/m³ (as Mg) fume and respirable dust

Short term exposure limit (15 minutes) (mg/m³): 10 mg/m³ (as Mg) inhalable dust fume

Silicon dioxide

Long term exposure limit (8 hours) (mg/m³): 0,1 (respirable fraction)

Annotations:

Carc = Capable of causing cancer and/or heritable genetic damage.

Iron(III) oxide

Long term exposure limit (8 hours) (mg/m³): 5 fume (as Fe)/10(inhalable)/4(respirable)

Short term exposure limit (15 minutes) (mg/m³): 10 fume (as Fe)

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002. EH40/2005 Workplace exposure limits (Fourth Edition 2020).

DNEL

No data available.

PNEC

No data available.

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations: Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios: There are no exposure scenarios implemented for this product.

Exposure limits: Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures: Avoid contact with skin and eyes. Avoid inhalation of welding fumes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene measures: In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure: No specific requirements.

Individual protection measures, such as personal protective equipment

Generally: Use only UKCA marked protective equipment.

Respiratory Equipment:

Type	Class	Colour	Standards
During welding supplied- 2 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.	2	White, brown, yellow, gray	EN 143:2021, EN 149:2001 + A1:2009, EN 405, EN 139

Skin protection:

Recommended	Type/Category	Standards
Heat-resistant clothing. Use heat-insulating gloves, footwear, and other protective equipment intended for welding.		



Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
Gloves made of insulating material. Heat-resistant gloves. Chemical resistant gloves required for prolonged or repeated contact.	-	-	EN 12477:300+A1:2005, EN ISO 374-1:2016/A1:2018, EN ISO 374-2:2019, EN ISO 374-4:2019

Eye protection:

Type	Standards
	Wear safety glasses with EN 166:2001 high protection against UV radiation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Solid Wire
Colour:	Metal. Copper.
Odour / Odour threshold:	None
pH:	No data available.
Density (g/cm ³):	No data available.
Kinematic viscosity:	Does not apply to solids.
Particle characteristics:	No data available.

Phase changes

Melting point/Freezing point (°C):	No data available.
Softening point/range (°C):	Does not apply to solids.
Boiling point (°C):	Does not apply to solids.
Vapour pressure:	No data available.
Relative vapour density:	Does not apply to solids.
Decomposition temperature (°C):	No data available.

Data on fire and explosion hazards

Flash point (°C):	Does not apply to solids.
Flammability (°C):	No data available.
Auto-ignition temperature (°C):	No data available.
Lower and upper explosion limit (% v/v):	Does not apply to solids.

Solubility

Solubility in water:	Insoluble
n-octanol/water coefficient (LogKow):	No data available.
Solubility in fat (g/L):	No data available.

9.2. Other information

Oxidizing properties:	No data available.
Other physical and chemical parameters:	No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactive groups.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid moisture and humidity to prevent corrosion.

10.5. Incompatible materials

Acids

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 as retained and amended in UK law

Acute toxicity

Product/substance	Titanium dioxide
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	>10000 mg/kg

Product/substance	Titanium dioxide
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	>6.82 mg/L

Product/substance	Manganese
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	9000 mg/kg

Product/substance	Zirconium compounds (as Zr)
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	> 8800 mg/kg

Product/substance	Silicon
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	3160 mg/kg

Product/substance	Silicon (Si)
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	3160 mg/kg

Product/substance	Aluminium(III)oxide
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	>5000 mg/kg

Product/substance	Magnesium
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	9000 mg/kg

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Symptoms related to the physical, chemical and toxicological characteristics

Alloys in solid form are not required to be labeled according to the CLP regulation (1272/2008), Art. 23(d) and Annex I 1.3.4. These complex alloys in solid form have no known toxicological properties other than causing allergic reactions in individuals sensitive to the metals in the alloys. Hazardous fumes or dust emissions may be released during remelting, grinding, cutting, or welding.

In the smoke emitted during use, there will be an 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.

11.2. Information on other hazards

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

Titanium dioxide has been classified by IARC as a group 2B carcinogen.

Silicon dioxide has been classified by IARC as a group 1 carcinogen.

Iron(III) oxide has been classified by IARC as a group 3 carcinogen.

SECTION 12: Ecological information

12.1. Toxicity

Product/substance	Titanium dioxide
Species:	Fish, Fundulus heteroclitus
Duration:	96 hours
Test:	LC50
Result:	>1000 mg/L

Product/substance	Titanium dioxide
Species:	Crustacean, Daphnia magna
Duration:	48 hours
Test:	EC50
Result:	>1000 mg/L

Product/substance	Manganese
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	2,91 mg/l

Product/substance	Manganese
Species:	Crustacean
Duration:	48 hours
Test:	EC50
Result:	5,2 mg/l

Product/substance	Aluminium
Species:	Fish
Test:	LC50
Result:	>100 mg/L

Product/substance	Aluminium
Species:	Crustacean
Test:	LC50

Result: >100 mg/L

Product/substance Aluminium(III)oxide
 Species: Fish, *Salmo trutta*
 Test: LC50
 Result: >100 mg/L

Product/substance Aluminium(III)oxide
 Species: Crustacean, *Daphnia magna*
 Duration: 48 hours
 Test: EC50
 Result: >100 mg/L

Product/substance Silicon dioxide
 Species: Crustacean, *Daphnia magna*
 Test: EC50
 Result: 7600 mg/L

Product/substance Silicon dioxide
 Species: Algae, *Selenastrum capricornutum*
 Duration: 72 hours
 Test: ErC50
 Result: 440 mg/L

Based on available data, the classification criteria are not met.

12.2. Persistence and degradability

Product/substance NSW E SF-1A
 Conclusion: Not biodegradable

12.3. Bioaccumulative potential

Product/substance Manganese
 BCF: 59052
 Conclusion: -

Product/substance Aluminium
 BCF: 18
 LogKow: <3
 Conclusion: -

Product/substance Silicon dioxide
 LogKow: 0,53
 Conclusion: -

12.4. Mobility in soil

The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

Waste treatment methods

Product is not covered by regulations on dangerous waste.
 Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code

12 01 13 Welding wastes

Specific labelling

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR/AD N/RID	-	-	-	-	-
IMDG	-	-	-	-	-
IATA	-	-	-	-	-

* Packing group

** Environmental hazards

Additional information

Not dangerous goods according to ADR/ADN/RID, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Restrictions for application: Restricted to professional users.

Demands for specific education: No specific requirements.

Control of Major Accident Hazards (COMAH) -

Categories / dangerous substances: Not applicable.

UK-REACH, Annex XVII: Aluminium is subject to UK-REACH restrictions (entry 40).
Magnesium is subject to UK-REACH restrictions (entry 40).

Additional information: Not applicable.

Sources: Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.
Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.**15.2. Chemical safety assessment**

No

SECTION 16: Other information**Full text of H-phrases as mentioned in section 3**

EUH032, Contact with acids liberates very toxic gas.

H228, Flammable solid.

H250, Catches fire spontaneously if exposed to air.

H260, In contact with water releases flammable gases which may ignite spontaneously.

H261, In contact with water releases flammable gases.

H301, Toxic if swallowed.

H315, Causes skin irritation.

H319, Causes serious eye irritation.

H411, Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CE = Conformité Européenne (European conformity)

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EC = Effective concentration
ED = Effective dose
EINECS = European Inventory of Existing Commercial chemical Substances
EL = Effective Loading
ErC = Concentration associated with x% growth rate response
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
HP = Hazardous Property code
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IC = X maximum inhibitory concentration
IMDG = International Maritime Dangerous Goods
LC = Lethal concentration
LCLo = Value is the lowest concentration of a material in air reported to have caused the death of animals or humans
LD = Lethal dose
LOAEC = Lowest Observed Adverse Effect Concentration
LOAEL = Lowest Observed Adverse Effect Level
LOEC = Lowest Observed Effect Concentration
LogKow = logarithm of the n-octanol/water coefficient
LL = Lethal Loading
M = For multiplication factor
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOELR = No Observable Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

Not applicable.

The safety data sheet is validated by

Safety Data Sheet Consulting AS

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle. The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: GB-en