

SAFETY DATA SHEET

Coreshield 8-Ni1H5

SECTION 1: Identification

1.1. Product identifier

Trade name

Coreshield 8-Ni1H5

Product no.

242203107, 242203131

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

Relevant identified uses of the substance or mixtureArc Welding
Restricted to professional users.**Uses advised against**

None known.

1.3. Details of the supplier of the safety data sheet

Company and address**ESAB Welding & Cutting Products**
801 Wilson Ave.
PA 17331 Hanover
USA
1-717-637-8911
https://esab.com/us/nam_en/**Contact person**

Product Stewardship Team

▼ E-mail

Productstewardship@esab.com

SDS date

4/29/2025

SDS Version

3.0

Date of previous version

1/7/2025 (3.0)

1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® (triage.webpoisoncontrol.org)
to get specific guidance for your case
See also section 4 "First aid measures".

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Not classified according to HCS (29 CFR 1910.1200)

2.2. Label elements

Hazard pictogram(s)

Not applicable.

Signal word

Not applicable.

Hazard statement(s)

Precautionary statement(s)

General

-

Prevention

-

Response

-

Storage

-

Disposal

-

Additional labelling

Not applicable.

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	70 - 100%		
Barium fluoride	CAS No.: 7787-32-8	6 - 10%	Acute Tox. 4, H302 Acute Tox. 4, H332	
Iron oxide	CAS No.: 1309-37-1	1 - 4%		
magnesium powder (pyrophoric)	CAS No.: 7439-95-4	0.3 - 2.5%	Pyr. Sol. 1, H250 Water-react. 1, H260	
Manganese	CAS No.: 7439-96-5	0.5 - 2%		
Barium oxide	CAS No.: 1304-28-5	0.5 - 1.5%		
Quartz*	CAS No.: 14808-60-7	0.2 - 1.5%	STOT RE 1, H372	
Nickel powder**	CAS No.: 7440-02-0	0.2 - 1%	STOT RE 1, H372	

Calcium fluoride	CAS No.: 7789-75-5	0 - 0.5%		
Carbon	CAS No.: 7440-44-0	0 - 0.4%		
Silicon	CAS No.: 7440-21-3	0 - 0.4%		

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

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

Other information

-

SECTION 4: First-aid measures

4.1. Description of first aid measures

General information

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

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.

Inhalation

In case of discomfort: bring the person into fresh air.

Skin contact

Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.

Eye contact

Rinse gently with lukewarm water. Remove any contact lenses if this is easy to do. Continue rinsing. In case of persistent eye irritation or discomfort: Seek medical help.

Ingestion

Rinse and flush mouth thoroughly and consume large quantities of water. In case of continued discomfort: seek medical assistance and bring this safety data sheet.

Burns

Not applicable.

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

None known.

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

Treat symptomatically.

Information to medics

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

SECTION 5: Fire-fighting 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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

- Halogenated compounds
- Some metal oxides

5.3. Advice for firefighters

No specific requirements.

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.

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

Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

7.2. Conditions for safe storage, including any incompatibilities

No special conditions required.

Recommended storage material

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

Storage conditions

No specific requirements

Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

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 oxide

Long term exposure limit (OSHA Table Z-1) (mg/m³): 10

Long term exposure limit (ACGIH TLV) (mg/m³): 5 (resp.)

Long term exposure limit (NIOSH REL) (mg/m³): 5 (dust and fume)

aluminium

Long term exposure limit (OSHA Table Z-1) (mg/m³): 15 Total dust / 5 Respirable fraction

Long term exposure limit (ACGIH TLV) (mg/m³): 1 Respirable fraction

Long term exposure limit (NIOSH REL) (mg/m³): 10 (Total dust), 5 (Respirable fraction)

Manganese

Short term exposure limit (STEL) (NIOSH REL) (mg/m³): 3

Long term exposure limit (OSHA Table Z-1) (mg/m³): (Ceiling limit) 5

Long term exposure limit (ACGIH TLV) (mg/m³): 0.02 (resp.) / 0.1 (Inhalable) / (for elemental and inorganic compounds)

Long term exposure limit (NIOSH REL) (mg/m³): 1

Quartz*

Long term exposure limit (ACGIH TLV) (mg/m³): 0.025 (resp.) for α-quartz and cristobalite

Long term exposure limit (NIOSH REL) (mg/m³): Potential occupational carcinogen; 0.05

Nickel powder**

Long term exposure limit (OSHA Table Z-1) (mg/m³): 1

Long term exposure limit (ACGIH TLV) (mg/m³): elemental: 1.5 (Inhalable); insoluble inorganic compounds: 0.2 (Inhalable) / soluble inorganic compounds: 0.1 (Inhalable)

Long term exposure limit (NIOSH REL) (mg/m³): Potential occupational carcinogen; 0.015

Silicon

Long term exposure limit (OSHA Table Z-1) (mg/m³): 15 (total dust) / 5 (Respirable fraction)

Long term exposure limit (NIOSH REL) (mg/m³): 10 (Total dust), 5 (Respirable fraction)

Zirconium

Short term exposure limit (STEL) (ACGIH TLV) (mg/m³): 10

Short term exposure limit (STEL) (NIOSH REL) (mg/m³): 10

Long term exposure limit (OSHA Table Z-1) (mg/m³): 5

Long term exposure limit (ACGIH TLV) (mg/m³): 5

Long term exposure limit (NIOSH REL) (mg/m³): 5

Calcium oxide

Long term exposure limit (OSHA Table Z-1) (mg/m³): 5

Long term exposure limit (ACGIH TLV) (mg/m³): 2

Long term exposure limit (NIOSH REL) (mg/m³): 2

Part 1910 - Occupational Safety and Health Standards (29 CFR 1910.1000 TABLE Z-1 - Limits for Air Contaminants)

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

Apply standard precautions during use of the product. Avoid inhalation of gas or dust. Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and showers are clearly marked.

Hygiene measures

Wash hands after use.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment


Generally

Use only protective equipment with a recognized certification mark, e.g. the UL mark.

Respiratory Equipment

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.

Skin protection

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.	-	-	

Hand protection

Wear Protective Gloves

Eye protection

Wear helmet or use face shield with filter lens for open arc welding processes. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others from the weld arc flash

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Color

Various colours

▼ Odor

No data available.

▼ Odor threshold (ppm)

No data available.

▼ pH

No data available.

▼ Density (g/cm³)

No data available.

Kinematic viscosity

Does not apply to solids.

Particle characteristics

No data available.

Phase changes**Melting point/freezing point (°F)**

-

Melting point/freezing point (°C)

>1300

Softening point/range (°F)

Does not apply to solids.

Boiling point (°F)

Does not apply to solids.

▼ Vapor pressure

No data available.

Relative vapor density

Does not apply to solids.

▼ Decomposition temperature (°F)

No data available.

Data on fire and explosion hazards**Flash point (°F)**

Does not apply to solids.

▼ Flammability (°F)

No data available.

▼ Auto-ignition temperature (°F)

No data available.

Explosion limits (% v/v)

Does not apply to solids.

Solubility**▼ Solubility in water**

No data available.

▼ n-octanol/water coefficient (LogKow)

No data available.

▼ Solubility in fat (g/L)

No data available.

9.2. Other information

Other physical and chemical parameters

No data available.

▼ Oxidizing properties

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Non Reactive unless gets in contact with chemical substances like acids or strong bases could cause generation of gas

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions, including those associated with foreseeable emergencies

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products: When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal / Coated wire / Coated rod / Bare wire / Bare rod.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Acute toxicity: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eye

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.

Long term effects

None known.

▼ Other information

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

Quartz* has been classified by IARC as a group 1 carcinogen.

Nickel powder** has been classified by IARC as a group 2B carcinogen.

SECTION 12: Ecological information**12.1. ▼ Toxicity**

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

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

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

12.4. Mobility in soil

No data available.

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. Other adverse effects

None known.

SECTION 13: Disposal considerations**RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)**

None of the components are listed

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:
DOT	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group

** Environmental hazards

Additional information

Not dangerous goods according to DOT, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. 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

15.2. ▼ U.S. Federal regulations

TSCA (the non-confidential portion)

- Iron is listed
- Barium fluoride is listed
- Iron oxide is listed
- aluminium is listed
- magnesium powder (pyrophoric) is listed
- Manganese is listed
- Barium oxide is listed
- Quartz* is listed
- Nickel powder** is listed
- Calcium fluoride is listed
- Carbon is listed
- Silicon is listed
- Zirconium is listed
- Calcium oxide is listed

▼ Clean Air Act

- Manganese is regulated as a hazardous air pollutant (HAPS)
- Nickel powder** is regulated as a hazardous air pollutant (HAPS)

EPCRA Section 302

None of the components are listed

EPCRA Section 304

None of the components are listed

▼ EPCRA section 313

aluminium is listed
Manganese is listed
Nickel powder** is listed

▼ CERCLA

Nickel powder** is regulated with a Reportable Quantity (RQ) of: 100 pounds

Hazardous chemical inventory reporting

This product is not subject to Tier II reporting.

▼ State regulations**▼ California / Prop. 65**

Nickel powder** is known to cause: Cancer

—

▼ Massachusetts / Right To Know Act

Iron oxide is listed
aluminium is listed
magnesium powder (pyrophoric) is listed
Manganese is listed
Quartz* is listed
Nickel powder** is listed
Silicon is listed
Zirconium is listed
Calcium oxide is listed

▼ New Jersey / Right To Know Act

Iron oxide / Substance number: 1036

—
aluminium / Substance number: 0054
aluminium is on the Special Health Hazard Substance List

—
magnesium powder (pyrophoric) / Substance number: 1136

—
Manganese / Substance number: 1155
Manganese is on the Special Health Hazard Substance List

—
Barium oxide / Substance number: 0187
Barium oxide is on the Special Health Hazard Substance List

—
Quartz* / Substance number: 1660
Quartz* is on the Special Health Hazard Substance List

—
Nickel powder** / Substance number: 1341
Nickel powder** is on the Special Health Hazard Substance List

—
Silicon / Substance number: 3125
Silicon is on the Special Health Hazard Substance List

—
Zirconium / Substance number: 2047
Zirconium is on the Special Health Hazard Substance List

—
Calcium oxide / Substance number: 0325
Calcium oxide is on the Special Health Hazard Substance List

—

▼ New York / Right To Know Act

Iron oxide is listed

Iron oxide is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

—

aluminium is listed

aluminium is regulated with a Treshold Reporting Quantity (TRQ) of: 1 pounds

—

magnesium powder (pyrophoric) is listed

magnesium powder (pyrophoric) is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

—

Manganese is listed

Manganese is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

—

Barium oxide is listed

Barium oxide is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

—

Nickel powder** is listed

Nickel powder** is regulated with a Reportable Quantity (RQ) of: 100 pounds

Nickel powder** is regulated with a Treshold Reporting Quantity (TRQ) of: 0 pounds

—

Calcium fluoride is listed

Calcium fluoride is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

—

Zirconium is listed

Zirconium is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

—

Calcium oxide is listed

Calcium oxide is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds

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▼ Pennsylvania / Right To Know Act

Iron oxide is listed

—

aluminium is listed

aluminium is hazardous to the environment (E)

—

magnesium powder (pyrophoric) is listed

—

Manganese is listed

Manganese is hazardous to the environment (E)

—

Quartz* is listed

—

Nickel powder** is listed

Nickel powder** is a special hazardous substance (S)

Nickel powder** is hazardous to the environment (E)

—

Silicon is listed

—

Zirconium is listed

—

Calcium oxide is listed

—

15.4. Restrictions for application

Restricted to professional users.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

15.5. Demands for specific education

No specific requirements.

15.6. Additional information

Not applicable.

15.7. Chemical safety assessment

No

15.8. Sources

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: Other information

▼ Full text of H-phrases as mentioned in section 3

H250, Catches fire spontaneously if exposed to air.

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

H302, Harmful if swallowed.

H332, Harmful if inhaled.

H372, Causes damage to organs through prolonged or repeated exposure.

The full text of identified uses as mentioned in section 1

None known.

Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists

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

CERCLA = Comprehensive Environmental Response Compensation and Liability Act

DOT = Department of Transportation

EINECS = European Inventory of Existing Commercial chemical Substances

EPCRA = Emergency Planning and Community Right-To-Know Act

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HCIS = Hazardous Chemical Information System

HNOC = Hazards Not Otherwise Classified

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

NFPA = National Fire Protection Association

NIOSH = National Institute for Occupational Safety and Health

OECD = Organisation for Economic Co-operation and Development

OSHA = Occupational Safety and Health Administration

PBT = Persistent, Bioaccumulative and Toxic

RCRA = Resource Conservation and Recovery Act

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
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

Product Stewardship Team

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: US-en