SAFETY DATA SHEET
CW 001 Carbon steel flux cored wire

Version number: 1
Replaces SDS: 2009-11-23
Issued: 2014-03-24

Not for sale in the USA

Section 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name CARBON STEEL FLUX CORED WIRE

Article-no (Afrox Coremax 71, Afrox Coremax 71 Plus, Afrox S71T-11)

Product packaging Data	*Diameter (mm)*	*Packaging (kg)*	*Item Number*
Afrox Coremax 71	1,2	15	W081130
	1,6	15	W081131
Afrox Coremax 71 Plus	1,2	15	W081230
	1,6	15	W081231

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

Article type FCAW Un-alloyed steel wire electrodes & Rods Classification: AWS SFA 5.20

Use Flux cored Gas shielded Arc welding

1.3 Details of the supplier of the safety data sheet

Supplier Afrox

Street address 23 Webber Street, Selby
Johannesburg, 2001
South Africa

Telephone +27 (0) 11 490 0400

Fax +27 (0) 860 020201

Email Customer.service@afrox.linde.com

1.4 Emergency telephone number

Available outside office hours Yes

Emergency phone number 0860 02 02 02

Other

Additional product information **Web site: www.afrox.co.za**

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1271/2008 [CLP] applicable

2.2 Label elements

Not applicable

2.3 Other hazards

This product contains: Nickel as classified as sensitising and limited evidence of carcinogenic effect. The form of this product does not contribute to a hazard classification of the product.
When the product is used in the welding process the most important hazards are:
Overexposure to fumes and gases from welding can be dangerous to health.
Watch out for splatter, hot metal and slag. It may cause skin burn and cause fire.
Arc rays can injure eyes and burn skin. Electric shock can kill. Avoid touching live electrical parts.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

This product is a mixture and please refer to Section 3.2

3.2 Mixtures

Component	E70T-1	E71T-1	E71T-5	E70T-9	E71T-12
Limestone and/or Calcium Carbonate	-	-	x	-	-
Magnesite	x	x	x	-	x
Aluminium oxides	-	-	-	-	x
Iron Oxides (as Fe)	x	-	-	x	-
Inorganic Fluorides (as F)	-	-	-	-	x
Iron powder	x	x	x	x	x
Manganese and its Inorganic compounds (as Mn)	2-5	1-4	1-2	3-4	1-3
Rutile/Titanium Dioxide	x	x	x	x	x
Silicon and Silicon Alloys, (as Si)	x	x	x	x	x
Nickel	-	-	-	<0.5	-
Quartz/Silica	x	x	x	x	x
Aluminium	<1	<1	-	-	-
Other Mineral Silicates	x	x	-	-	-
Silicate Binders	x	x	x	x	x

Section 4. FIRST AND MEASURES

4.1 Description of first aid measures

Inhalation	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms occur.
Skin contact	Burns should be treated by a doctor.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Burns from radiation, see doctor.
Ingestion	Contact a doctor if more than an insignificant amount has been swallowed.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation	Inhalation of vapours may cause irritation of the respiratory system in very susceptible

persons.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO2), powder or diffuse jet of water. In case of major fire: Extinguish fire with diffuse jet of water or foam.

5.2 Special hazards arising from the substance or mixture

Not applicable

5.3 Advice for fire fighters

Special protective equipment for fire fighters	Wear self contained breathing apparatus

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Skin contact should be avoided to prevent possible allergic reactions.

6.2 Environmental precautions

Try to prevent the material from entering drains or water courses.

6.3 Methods and material for containment and cleaning up

Not applicable

6.4 Reference to other sections

Personal protection see section 8 and for disposal see section 13. Environmental precautions, paragraph 12. See also section 7 Precautions for safe handling.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Preventive handling precautions	Ensure adequate ventilation for the welder and others. Use respiratory equipment when

	welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Remove all flammable materials and liquids before welding.
General hygiene	Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside walls. Store away from chemical substances like acids which could cause chemical reactions.

7.3 Specific end use(s)

Welding process.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Welding fume component	CAS No.	ES-TWA	ES-STEL
Total welding fume (particulate)	-	5	
Iron oxide fume (as Fe)	1309-37-1	5	10
Manganese and its inorganic compounds (as Mn)	7439-96-5	0.5	
Silica, amorphous (total inhalable dust) (respirable dust)	-	 6 2.4	
Magnesium oxide (as Mg) (total inhalable dust) (fume and respirable dust)	1309-48-4	 10 4	 10
Titanium dioxide (total inhalable dust) (respirable dust)	13463-67-7	 10 4	
Calcium Oxide	1305-78-8	2	
Calcium Silicate (total inhalable dust) (respirable dust)	1344-95-2	 10 4	
Fluoride, inorganic (as F)	16984-48-8	2.5	
Nitrogen dioxide (NO_2)	10102-44-0	3ppm	5ppm
Ozone (O_3)	10028-15-6	0.2 ppm	
Nitrogen monoxide (NO)	10102-43-9	25ppm	35ppm

8.2 Exposure controls

Environmental Exposure Controls – Refer to Section 6 of this SDS

Technical precaution measures	General ventilation and local fume extraction must be adequate to keep fume

	concentrations within safe limits.
Eye / face protection	Wear eye protection appropriate for welding.
Safety gloves	Skin contact should be avoided to prevent possible allergic reactions.
Other skin protection	Wear body protection which helps to prevent injury from radiation, sparks and electric shock.
Respiratory protection	Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance, colour	Grey
Appearance, physical state	Rod
Auto-ignition temperature	Not applicable
Auto-inflammability	Not auto-flammable
Decomposition temperature	Not applicable
Evaporation rate	Not applicable
Explosive properties	Not explosive
Flammability (solid gas)	Not applicable
Flash point	Not applicable
Form	Fast
Initial boiling point and boiling range	Not applicable
Melting point / Freezing point	Not applicable
Odour	Odourless
Odour threshold	Not applicable
Oxidising properties	Not applicable
Partition coefficient: n-octanol / water	Not applicable
pH value	Not applicable
Relative density	Not applicable
Solubility	Not applicable
Solubility in water	Insoluble
Upper / lower flammability or explosive limits	Not applicable
Vapour density	Not applicable
Vapour pressure	Not applicable

Viscosity	Not applicable

9.2 Other information

Not applicable

Other

Density	7.96g/cm^3

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Not applicable

10.2 Chemical stability

Stable at normal conditions.

10.3 Possibility of hazardous reactions

Not applicable

10.4 Conditions to avoid

None under normal conditions

10.5 Incompatible materials

Not applicable

10.6 Hazardous decomposition products

Welding fumes and gases. Additional fume may arise from coatings and contaminants on the base material.

Welding fume component	CAS No.	Classification (67/548EEC)	CLP (1272/2008)		Concentration of classified fume components
Aluminium oxide (Al)	1344-28-1	-	-	-	0.3
Barium (Ba)	7440-39-3	-	-	-	<0.1
Bismuth oxide (Bi)	12640-40-3	-	-	-	<0.1
Calcium (Ca)	1305-78-8	-	-	-	0.1
Cobalt oxide (Co)	1307-96-6	R22: Harmful if swallowed R43: May cause sensitisation by contact	Acute tox 4 (oral) Skin sens. 1	H302 H317	<0.1

Chromium III compounds (as Cr)	24613-89-6	R45: May cause cancer R35: Causes severe burns R43: May cause sensitisation by skin contact	Carc. 1B Skin Corr. 1A Skin Sens. 1	H350 H314 H317	<0.1
Copper oxide (Cu)	1317-38-0	-	-	-	<.1
Iron oxide (Fe)	1332-37-2	-	-	-	31.5 to 35.3
Potassium (K)	7440-09-7	R34: Causes burns	Skin Corr. 1B	H314	4.9 to 6.1
Lithium (Li)	7439-93-2	R34: Causes burns	Skin Corr. 1B	H314	<0.1
Magnesium oxide (Mg)	1309-48-4	-	-	-	2.3 to 2.8
Manganese (Mn)	7439-96-5	-	-	-	9.6 to 13.4
Molybdenum (Mo)	7439-98-7	Molybdenum trioxide R36/37: Irritating to eyes and respiratory system R40: Limited evidence of carcinogenic effect	Molybdenum trioxide Carc. 2 Eye Irrit. 2 STOT SE 3	H351 H319 H335	<0.1
Sodium (Na)	7440-23-5	R34: Causes burns	Skin Corr. 1B	H314	1.9 to 2.2
Nickel (Ni)	7440-02-0	R40: Limited evidence of carcinogenic effect R43: May cause sensitisation by skin contact R48/23: Toxic danger of serious damage to health by prolonged exposure through inhalation R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	Carc. 2 Skin sens 1 STOT RE 1	H351 H317 H372	0.2 to 0.3
Lead (Pb)	7439-92-1	-	-	-	<0.1
Silicon (Si)	7440-21-3	-	-	-	3.4 to 5.3
Titanium dioxide (Ti)	13463-67-7	-	-	-	1.9 to 3.8
Vanadium (V)	7440-62-2	-	-	-	<0.1
Zinc (Zn)	7440-66-6	-	-	-	0.4

Classification	H phrase	Text
Skin corrosion/irritation: Category 1B	H314	Causes severe skin burns and eye damage

The classification information above relates to the fume during use

Fume analysis: wt %	Fume analysis: wt %
Al 0.1 to 1.2	Ni 0.1 to 0.2
Ca 0.1 to 11.6	Pb 0.1 to 1.8
Fe 11.9 to 54.9	Si 2.1 to 16.3
K 0.6 to 23.8	Ti 0.1 to 3.2
Li 0.1 to 0.8	Zn 0.1 to 3.5
Mg 0.1 to 5.3	F- 0.1 to 21.4
Na 0.5 to 8.7	

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Conditions to avoid: none in the form supplied

When welding, fumes and gases generated can be dangerous to health.

Acute toxicology	Excessive exposures may affect human health, as follows: Aspiration may cause pulmonary oedema and pneumonitis Short-term overexposure can cause dizziness, nausea and irritation of the nose, throat or eyes.
Irritation	Not applicable
Corrosive effects	Not applicable
Sensitisation	May cause sensitisation by skin contact
Mutagenicity	Not applicable
Carcinogenicity	Welding fumes are possibly carcinogenic to humans
Repeated dose toxicity	Not applicable
Reproductive toxicity	Not applicable

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

The welding process can effect the environment if fume is released directly into the atmosphere. Residues from welding consumables could degrade and accumulate into soils and ground water.

Acute fish toxicity	LC50 Fish 96h: Manganese: 2,91 mg/l Aluminiumoxide: >100 mg/l Salmo trutta
Acute algae toxicity	IC50 Algae 72h: Manganese: 0,55 mg/l Aluminiumoxide: >100 mg/l Selenastrum capricornatum (green algae)
Acute crustacean toxicity	EC50 Daphnia 48h: Manganese: 5,2 mg/l Aluminiumoxide: >100 mg/l Daphnia magna (Water flea)

12.2 Persistence and degradability

Not applicable

12.3 Bio accumulative potential

Bioconcentration factor (BCF):

Iron: 140000

Manganese: 59052

12.4 Mobility in Soil

Not applicable

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

Not applicable

Section 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal considerations	Dispose of any product, residue or packing material according to national and local regulations. Spent ;fume extraction filters shall be disposed of as dangerous waste.

Other

Waste code (EWC)	12 01 13 – welding waste

Section 14. TRANSPORT INFORMATION

14.1 UN number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

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

Not applicable

Other

Dangerous goods	No

Section 15. REGUATORY INFORMATION

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

EU reguations	*The product does not need to be labelled in accordance with EC directives or respective national laws.*
National regulations	*EH40/2005 Workplace exposure limits* *The Waste Regulations 2011 No. 988* *Local laws and regulations should be carefully observed.*

15.2 Chemical safety assessment

Not applicable

Section 16. OTHER INFORMATION

References to key literature and data sources	Regulation (EC) No 1907/2006 of the European Parliament and of the Council, (REACH). Regulation (EC) No 1272/2008 of the European Parliament and of the Council. EH40/2005 Workplace exposure limits. The Waste regulations 2011 No.988

Phrase meaning	C&L Inventory database Annex VI CLP Regulation (EC) 1272/2008 H314 – Causes severe skin burns and eye damage H350 – May cause cancer.

Other

Manufacturer's notes	*Read this Safety Data Sheet carefully and become aware of hazards implied and the safety information.*

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