1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of substance / preparation

Product identifier : Cast iron SMAW/MMA welding electrode.

Product name :

Trade name	BS EN 1071	AWS A5.15
CI Soft Flow Ni	E C Ni-CI 1	ENi-CI

1.2 Use of substance / preparation

Use of substance/preparation : SMAW/MMA Electrodes.

Main use category : Industrial use – Professional use

Industrial category : Welding

1.3 Company / undertaking identification

Supplier Metrode Products Ltd
Hanwoth Lane
Chertsey
Surrey
KT16 9LL
United Kingdom

Company role : Producer - Supplier

Company telephone number : +44 1932 566721

Web : www.metrode.com

2. HAZARDS IDENTIFICATION

2.1 Classification and General Hazards

When this product is used in a welding process the following hazards are most important.
Heat: Spatter and hot, or molten, metals can cause burns and start fires.
Radiation: Arc rays can damage skin and eyes.
Electrical: Electric shock can kill.
Fumes: Overexposure to welding fumes may result in dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure may affect pulmonary function. Fume from this product contains substances that are suspected of being carcinogenic.

2.2 Label elements

SMAW/MMA electrodes in this product form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment

2.3 Other hazards

Processes which generate particulates during welding can cause hazards to health or environmental effects and they may cause an allergic reaction on contact with skin or by inhalation

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance / Preparation

Processes which generate particulates during welding can cause hazards to health or environmental effects and they may cause an allergic reaction on contact with skin or by inhalation

3.2 Mixture

The substances in the preparation are as follows:

Composition/Information on Coating Ingredients

This product is a pure nickel core wire with an extruded flux coating. Components in the flux coating:

Flux	Weight % (max)	CAS Number	Hazard	TLV, mg/m^3
$CaCO_3$	5	1317-65-3	-	10
Other carbonates (Sr)	60	1633-05-2	-	10
Fluorides	20	7789-75-5	-	2.5
Mineral silicate	5	1332-58-7	-	5 (dust)
Silicate binders	5	1344-09-8	-	10
Mn	5	7439-96-5	-	0.2 (fume)
Ni	15	7440-02-0	Xn; R40, R43	1.5 (metal) 0.2 (insol)
Fe	15	7439-89-6	-	5 (oxide)
Graphite	15	7782-42-5	-	2

4. FIRST AID MEASURES

General: Move to fresh air and call for medical aid.
Inhalation: If breathing is difficult provide fresh air and call doctor.
Eye: For radiation burns due to arc flash seek medical attention.
Skin: For radiation burns seek medical attention.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Stainless steel rutile coated SMAW/MMA/MMA welding electrodes are non-combustible.

5.2 Advice for fire-fighter

Use ordinary safety equipment.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: See section 8.

6.2 Environmental precautions

Environmental precautions: See section 12 and 13.

6.3 Methods and material for containment and cleaning up

Not applicable to SMAW/MMA electrodes

6.4 Reference to other sections

See also section 8.

7. HANDLING AND STORAGE

7.1

Handling: Do not ingest.
Storage: Keep separate from chemical substances such as acids and strong bases which could cause chemical reactions.
Precautions for safe handling

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry environment. Keep separate from chemical substances such as acids and strong bases which could cause chemical reactions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ensure sufficient ventilation and exhaust at the arc to keep welding fumes and gases away from the welders breathing zone. Keep work area and protective clothing clean and dry. Insulate conductive parts and avoid contact with live electrical parts. Personal protective equipment: face shield with protective lens, safety boots, gloves, helmet, overalls, apron, arm and shoulder protection.

Welding/Brazing produces fumes which can affect human health and the environment. Fumes are a varying mixture of airborne gases and fine particles which, if inhaled or swallowed, constitute a health hazard. The degree of risk will depend on the composition of the fume, concentration of the fume and duration of exposure. The fume composition is dependent upon the material being worked, the process and consumables being used, coatings on the work such as paint, galvanizing or plating, oil or contaminants from cleaning and degreasing activities. A systematic approach to the assessment of exposure is necessary, taking into account the particular circumstances for the operator and ancillary worker that can be exposed.

Considering the emission of fumes when welding, brazing or cutting of metals, it is recommended to

1- Arrange risk management measures through applying general information and guidelines provided by this exposure scenario and
2- Using the information provided in this MSDS.
The employer shall ensure that the risk from welding fumes to the safety and health of workers is eliminated or reduced to a minimum. The following principle shall be applied:
1- Select the applicable process/material combinations with the lowest class, whenever possible.
2- Set welding process with the lowest emission parameter.
3- Apply the relevant collective protective measure in accordance with class number. In general, the use of PPE
I is taken into account after all other measures is applied.
4- Wear the relevant personal protective equipment in accordance with the duty cycle.
In addition, compliance with the National Regulations regarding the exposure to welding fumes of welders and related personnel shall be verified.

8.1. Control parameters
MAC, PEL, TLV values vary per element as well as per country. Check your national limit values.

8.2 Exposure control
Always check the applicability of any protective equipment with your supplier.

8.2.1 Eye/face protection
Always wear eye protection when handling dusts and other particulates, egg safety glasses with side protection, safety goggles or visor.

8.2.2 Skin protection
Always wear protective clothing when handling dusts and other particulates.

8.2.3 Hand protection
Wear hand protection, egg leather gloves when handling the SAW process to avoid cuts. Always wear disposable nitrile or vinyl gloves when handling particulate material to avoid skin contact. Where necessary wear the disposable gloves under work gloves to protect against both types of hazard.

8.2.4 Respiratory protection
In case of prolonged or frequent exposure to particulates, wear particle filter mask (like for instance P3).

8.2.5 General hygiene measures
Wash hands well with soap and water after handling dusty materials. Wash contaminated clothing to avoid secondary contamination or contamination of other personnel.

8.2.6 Thermal hazards
Ensure adequate ventilation to keep levels of air-borne particles below occupational exposure limits given above. Working areas should be provided with extraction. Factories should be kept clean to avoid any unnecessary contamination.

8.2.7 Environmental exposure control
Avoid letting dust and fumes entering the outside air.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Solid, odourless, non-volatile of black in colour

9.2 Other information

10. STABILITY/REACTIVITY

10.1 Reactivity

Reactivity: Contact with acids or strong bases could generate gaseous decomposition products.
When this product is used in a welding process, decomposition products would include those from the volatilisation, reaction or oxidation of the materials in section 2; and those from the base material and any coating on the base material. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Particulate fume constituents would include metal oxides. The maximum percentage of the relevant fume constituents would be as follows:

Fe	Mn	Ni	Cu	F	Ba
0.5	1	10	0.5	18	0.5

10.2 Chemical stability

This product is stable under normal conditions

10.3 Possibility of hazardous reactions

See section 8

10.4 Conditions to avoid

No special conditions need to be avoided, however keep dust and fumes from entering the environment.

10.5 Incompatible materials

Contact with acids can generate explosive gasses, egg hydrogen.

10.6 Hazardous decomposition products

SMAW/MMA electrodes are stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

11.1 General

Inhalation of welding fumes, dust and gases can be hazardous for health.

11.2 Chronic toxicity

Overexposure may affect pulmonary function. Fume from this product contains substances that are suspected of being carcinogenic.

11.2 Acute toxicity

Overexposure to welding fumes may result in dizziness, nausea, dryness or irritation of the nose, throat or eyes.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

SMAW/MMA electrodes may contain metals which are considered to be toxic towards aquatic organisms.

12.2 Persistence and degradability

SMAW/MMA electrodes consist of elements that cannot degrade any further in the environment.

12.3 Mobility in soil

SMAW/MMA electrodes are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

12.4 Results of PBT and vPvB assessment

No chemical safety report is required for SMAW/MMA electrodes. Neither the SMAW/MMA electrodes in itself or the substances that it consist of, meet the criteria for PBT or vPvB in accordance with REACH, Annex XIII.

12.5 Other adverse effects

In massive form, SMAW/MMA electrodes present no hazards to the aquatic environment. Particles and ions can, never the less, enter the aquatic compartment by means of dusts or smoke, or by liberation due to erosion thereby introducing iron or heavy metals into the ground or water.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Discard any product, residue, disposable container or liner in a n environmentally acceptable manner in full compliance with local and national regulations. Use recycling procedures if available

13.2 EU and Local legislation

The recommendations given are considered appropriate for safe disposal. However, local regulations may be more stringent and these must be complied with. EURAL CODE : 120113

14. TRANSPORT INFORMATION

14.1 UN number

SMAW/MMA electrodes are not classified as dangerous goods for transport and have no UN number.

14.2 UN proper shipping name

SMAW/MMA electrodes are not classified as dangerous goods for transport and have no UN proper shipping name.

14.3 Transport hazard class(es)

SMAW/MMA are not classified as dangerous goods for transport.

14.4 Packing group

There are no any special precautions with which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises.

14.5 Environmental hazards

SMAW/MMA electrodes are not environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and ADN) and/or a marine pollutant according to the IMDG Code.

14.6 Special precautions for user

There are no any special precautions which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises of the welding rods.

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

Submerged arc fluxes in massive form are not subject to MARPOL73/78 and the IBC Code.

15. REGULATORY INFORMATION

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

Prepared according to EU Directives 1907/2006 (REACH) & 1272/2008 (CLP). SMAW/MMA electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment. Welding electrodes in particulate form egg dust, fumes, mist may cause an allergic reaction on contact with skin or if inhaled.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out for the product.

15.3 Full text of R-phrases used in Section 3

R20 Harmful by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin
R48 Danger of serious damage to health by prolonged exposure through inhalation

16. OTHER INFORMATION

Protect yourself and others. Take precautions when welding. Follow your employers' safety practice, which should be based on manufacturer's hazard data available to your employer. Fumes and gases can be dangerous to your health. Arc rays can injure eyes and burn skin. Electric shock can kill. Read and understand the manufacturer's instructions and your employer's safety practices. Keep your head out of the fumes. Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone, and the general area. Wear correct eye, ear and body protection. Do not touch live electrical parts. U.K.: see WMA No.236 and 237 and HSE Guidance Note EH 40. U.S.A.: See American Standard Z 49.1 "Safety in Welding and Cutting", published by the American Welding Society, 550 Le Jeune Rd, Miami, Florida 33126-5699; OSHA Safety and Health Standards, 29 CFR 1910, available from U.S. Government printing office, Washington D.C. 20402-0001. All national/local prescriptions remain applicable. The data given in this sheet relate to the unused product, unless specified otherwise. During usage dangerous products can be formed (welding fume, radiation, etc.).

General Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

REACH Disclaimer

This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information is available at the time of compilation.