

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

### 1.1 Identification of substance / preparation

Product identifier : Selfshielded Flux Cored Welding Wires (SSFCAW)  
 Product name : Innershield NR152, Innershield NR203Ni1, Innershield NR203NiC, Innershield NR204-H, Innershield NR207, Innershield NR208-H, Innershield NR211MP, Innershield NR232, Innershield 233, Innershield NR305, Innershield NR311, Innershield NR400, Innershield NR431, Innershield NR450-H, Innershield NS3M

### 1.2 Use of substance / preparation

Use of substance/preparation : Flux Cored Arc Welding Wire  
 Main use category : Industrial use – Professional use  
 Industrial category : Welding

### 1.3 Company / undertaking identification

Supplier : Lincoln Electric Europe B.V.  
 Nieuwe Dukenburgseweg 20  
 6534AD Nijmegen  
 The Netherlands  
 Company role : Producer - Supplier  
 Company telephone number : +31 243 522 911  
 Company fax number : +31 243 522 245  
 Web : www.lincolnelectric.eu

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification and General Hazards

Cored welding wires containing nickel are classified for skin sensitization only when the release rate is minimum 0.5µg Ni/cm<sup>2</sup>/week. The cored wires that this MSDS concerns are not classified as hazardous to health and environment according to present regulation.

### 2.2 Label elements

Cored welding wires 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

### 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. The cored wires do not meet the criteria for PBT or vPvB in accordance with Annex XIII.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance / Preparation

For information on each substance in the cored welding wires, see 3.2.

### 3.2 Mixture

The substances in the preparation are as follows (see section 15. Regulatory Information for text applicable H-phrases):

Ingredient	CAS nr	EINICS nr	Hazard statements	Concentration Max weight%
Iron	7439-89-6	231-096-4	N.A.	Balance
Mn and/or Mn-alloys and compounds (as Mn)	7439-96-5	231-105-1	N.A.	5
Si and/or Si-alloys and compounds (as Si)	7440-21-3	231-130-8	N.A.	1
Mg and/or Mg-alloys and compounds (as Mg)	7439-95-4	231-104-6	H228; H261	5
Ni and/or Ni-alloys and compounds (as Ni)	7440-02-0	231-111-4	H317; H331; H351; H373; H412; H413	1
Ti and/or Ti-alloys and compounds (as Ti)	7440-32-6	231-072-3	N.A.	1
Fluorides (as F)	7789-75-5	14542-23-5	N.A.	5
Calciumcarbonate	1317-65-3	215-279-6	N.A.	1
Al and/or Al-alloys and compounds (as Al)	7429-90-5	231-072-3	H228; H261	5
Barium compounds (as Ba)	7440-39-3	231-149-1	H261, H315; H319; H335	10
Strontium compounds (as Sr)	1633-05-2	216-643-7	H315; H319; H335	1
Magnesite	1309-48-4	215-171-9	N.A.	1
Zircon	12036-23-6	234-843-2	N.A.	0.5
Nb and/or Nb-alloys and compounds (as Nb)	7440-03-01	231-113-5	N.A.	0.5

Ingredient	CAS nr	EINICS nr	Risk phrase	Concentration Max weight%
Lithiumcarbonate	554-13-2	209-062-5	N.A.	0.5
Rare Earth	68476-89-1	270-706-3	N.A.	0.5

## 4. FIRST AID MEASURES

Cored welding wires in themselves or particles from the cored wires are not judged as acute toxic. An average content in the air of a single substance at the level of the limit considered, with current knowledge, generally not present any risk of injury or discomfort. It is nevertheless important to strive to keep all air pollutants as low as possible during the exposure limit. A particularly important situation is that if someone is exposed to multiple air pollutants simultaneously or exposed to air pollution related to heavy work. There is no indication of immediate medical attention or special treatment for the welding electrodes.

General : Show this safety data sheet to the doctor on duty  
 Inhalation : When breathing is difficult, provide fresh air and contact physician  
 Skin contact : For skin burns from arc radiation, seek medical attention.  
 Eye contact : For radiation burns due to arc flash, seek medical attention.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

The cored welding wires are non-combustible as a solid. Where metal dust or powder is involved, cover with dry sand, chemical powder, or other dry inert material to minimize the risk of explosion.

### 5.2 Advice for fire-fighter

Use ordinary safety equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Not applicable to solid metal / cored welding wires in massive form. In particulate form, wear personal protective equipment as specified in Section 8. Avoid contact with the skin. Do not inhale dust.

### 6.2 Environmental precautions

Collect powder using a vacuum cleaner or by gentle sweeping to keep dust away from drains, surface and ground water. Prevent particulates from entering watercourses or drains. Avoid formation of dust clouds.

### 6.3 Methods and material for containment and cleaning up

Collect powder using a vacuum cleaner or by gentle sweeping.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

No special precautions necessary for cored wires in massive form other than normal physical handling techniques. Extraction should be used when working with particulate material (dust, fumes, mist). Avoid prolonged inhalation of dust. Wear gloves to avoid contact with skin (see Section 8). Do not to eat, drink or smoke in work areas and wash hands / shower when leaving the working areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry environment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read and understand the "Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded", available from your supplier.

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 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 may 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, e.g. 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, e.g. leather gloves when handling welding electrodes with sharp edges 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**

Cored welding wires delivered in solid form give no health risk through inhalation. Extraction should be used when working with particulate material (dust, fumes, mist). 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**

Appearance	: Metallic outer sheet, with minerals/alloys fill
Odor	: Odorless
Melting- / freezing point:	1200 -1500 °C
Vapor density	: 7.8 kg/dm <sup>3</sup>

*Note: These are typical values and do not constitute a specification.*

### **9.2 Other information**

No other physical or chemical parameters are necessary for cored welding wires.

## **10. STABILITY/REACTIVITY**

### **10.1 Reactivity**

Cored welding wires are stable. Any reaction should not take place under normal circumstances.

### **10.2 Chemical stability**

Cored welding wires are 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 for cored welding wires, however keep dust and fumes from entering the environment.

### **10.5 Incompatible materials**

Contact with acids can generate explosive gasses, e.g. hydrogen.

### **10.6 Hazardous decomposition products**

Cored welding wires are stable under normal conditions

## 11. TOXICOLOGICAL INFORMATION

### **11.1 General**

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

Welding electrodes containing nickel carry a risk of producing an allergic reaction following prolonged contact or in already sensitized persons. No further toxicological data available for cored welding wires.

### **11.2 Chronic toxicity**

Over-exposure to welding fumes and dust may affect pulmonary function. Welding fumes and dust may contain chromium, and nickel compounds which are suspected of being cancer causing agents.

### **11.2 Acute toxicity**

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

### **11.3 Other information**

Nickel is classified as a skin sensitizer. Can cause skin sensitization to susceptible individuals through prolonged contact with the skin

## 12. ECOLOGICAL INFORMATION

### **12.1 Toxicity**

Cored welding wires may contain metals which are considered to be toxic towards aquatic organisms.

### **12.2 Persistence and degradability**

Cored welding wires consist of elements that cannot degrade any further in the environment.

### **12.3 Mobility in soil**

Cored welding wires are not soluble in water or soil. Particles formed by working with cored welding wires can be transported in the air.

### **12.4 Results of PBT and vPvB assessment**

No chemical safety report is required for the cored welding wires, however neither the cored welding wire 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, cored welding wires 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**

Non-contaminated waste from production and cored welding wires are recyclable. The unused product is not classified as hazardous waste. Dispose in accordance with appropriate government regulations.

Any residues of finely divided product (particles, dust, fumes) may be regarded as Hazardous Waste, depending on local regulations.

### **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

Cored welding wires are not classified as dangerous goods for transport and have no UN number.

### 14.2 UN proper shipping name

Cored welding wires are not classified as dangerous goods for transport and have no UN proper shipping name

### 14.3 Transport hazard class(es)

Cored welding wires 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

Cored welding wires 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 cored welding wires.

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

Cored welding wires 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 2015/830. Classifications mentioned in section 3 concerns substances in their crushed form. Cored welding wires 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 e.g. 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 H-phrases used in Section 3

H228 – Flammable solid.

H261 – In contact with water releases flammable gases.

H315 – Causes skin irritation.

H317 – May cause an allergic skin reaction.

H319 – Causes serious eye irritation.

H331 – Toxic if inhaled.

H335 – May cause respiratory irritation.

H351 – Suspected of causing cancer .

H373 – May cause damage to organs through prolonged or repeated exposure

H412 – Harmful to aquatic life with long lasting effects.

H413 – May cause long lasting harmful effects to aquatic life.

## 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