



MATERIAL SAFETY DATA SHEET

INOX 316 RLC

Revision number: 3

Date: 04-11-2011

Supersedes SSE5EN ed. 2 dd 25-01-2010

SSE5EN – 221

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

Identification of the product: **INOX 316 RLC**
Use: Covered electrodes for manual metal arc welding.
Company identification: I.N.E. S.p.A.
Via Facca 10
35013 Cittadella (PADOVA) ITALY
Tel. : +39 049/9481111 Fax: + 39 049/9400249
Internet: www.ine.it E mail: ine@ine.it
Emergency phone number: I.N.E. S.p.A. +39 049/9481138
Ore 8.30-12-30 e 13.30-17.30

2. HAZARDS IDENTIFICATION

Risk by welding use

Heat: Spatter and melting metal can cause burn injuries.
Radiation: UV, IR radiations. Arc ray can severely damage eyes or skin.
Fumes: Formation of dangerous fumes during use. Inhalation of welding fumes may cause respiratory irritation. Cough. Excessive or prolonged inhalation of fumes may cause metal fume fever.
Electricity: Electric shocks can kill.
Magnetic fields: Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device.
Noise: Noises generated by welding equipment could damage auditory system.

3. COMPOSITION / INFORMATION ON INGREDIENTS

This product is considered to be hazardous and contains hazardous components (Cr > 15% / < 25%, Ni > 10% / < 15%).

| Substance name | Value | N. CAS | EC No. | Substance no. | Classification |
|--------------------------------|----------------|------------|-----------|---------------|--------------------------------------|
| Iron | 22 - 47 % | 7439-89-6 | 231-096-4 | – | |
| Manganese | 1.00 - 3.00 % | 7439-96-5 | 231-105-1 | – | |
| Rutile (TiO ₂) | 3.00 - 10.00 % | 1317-80-2 | 215-282-2 | – | |
| Minerals (as feldspar) | 3.00 - 10.00 % | 68476-25-5 | 270-666-7 | – | |
| Fluorspar (CaF ₂) | 1.00 - 3.00 % | 7789-75-5 | 232-188-7 | – | |
| Minerals (as mica) | 3.00 - 10.00 % | 12001-26-2 | 310-127-6 | – | |
| Cellulose | 0.50 - 2.00 % | 9004-34-6 | 232-674-9 | – | |
| Limestone (CaCO ₃) | 1.00 - 3.00 % | 1317-65-3 | 215-279-6 | – | |
| Potassium silicate | 1.00 - 3.00 % | 1312-76-1 | 215-199-1 | – | |
| Quartz (SiO ₂) | 1.00 - 3.00 % | 14808-60-7 | 238-878-4 | – | |
| Nickel | 0.10 - 1.00 % | 7440-02-0 | 231-111-4 | 028-002-00-7 | Carc. Cat.3, Xn, T, R40, R43, R48/23 |
| Nickel (powder excluded) | 7.00 - 10.00 % | 7440-02-0 | 231-111-4 | 028-002-00-7 | Carc. Cat.3, Xn, T, R40, R43, R48/23 |
| Cromium | 10 - 25 % | 7440-47-3 | 231-157-5 | – | |
| Molybdenum | 1.00 - 4.00 % | 7439-96-7 | 231-107-2 | – | |



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4. FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Assure fresh air breathing. Obtain medical attention if breathing difficulty persists.

Skin contact: Take off immediately all contaminated clothing. Flush with plenty of water. Seek medical advice.

Eye contact: Rinse immediately with plenty of water. Seek medical attention immediately.

Ingestion: Rinse mouth. Do not induce vomiting. Obtain emergency medical attention.

5. FIRE-FIGHTING MEASURES

Flammable class: The product is not flammable.

Prevention: Welding hot slag or sparks may cause fire.

Extinguishing media: Powder, foam, carbon dioxide, water.

Protection against fire: Do not enter fire area without proper protective equipment, including respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Equip clean-up crew with proper protection.

After spillage and/or leakage: On land, sweep or shovel into suitable containers.

7. HANDLING AND STORAGE

Storage: Store in dry protected location to prevent any moisture contact. Keep packages closed when not in use. High-density solid product; avoid storage in unstable positions.

Handling: Handle with care; protect your hands and feet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection Gas and welding fumes generated during the use.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe gas/fumes/vapour.

Hand protection: Welding gloves.

Skin protection: Skin protection appropriate to the conditions of use should be provided.

Eye protection: Use a protection mask equipped with suitable filter glasses. Interdiction to wear contact lenses.



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Occupational Exposure Limits

| Substance | CAS | Limit value (TLV) * |
|--|------------|-----------------------|
| Manganese and inorganic compounds (as Mn) | 7439-96-5 | 0.2 mg/m ³ |
| Si oxides (as Si fumes) | 69012-64-1 | 2 mg/m ³ |
| Fe oxides (powder and fumes as Fe) | 1309-37-1 | 5 mg/m ³ |
| Titanium oxides | 13463-67-7 | 10 mg/m ³ |
| Particles not otherwise classified (PNOC) | | 3 mg/m ³ |
| Cr, powder and inorganic compounds (as Cr) | 7440-47-3 | 0.5 mg/m ³ |
| Nickel, inorganic compounds (as Ni) | 7440-02-0 | 0.1 mg/m ³ |
| Mo, insoluble compounds and metal (as Mo) | | 3 mg/m ³ |

* Values taken from "Giornale degli Igienisti Industriali", april 2011

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------------|-----------------|
| Physical state: | Solid. |
| Color: | Grey. |
| Odour: | Odourless. |
| pH value: | Not applicable. |
| Melting point [°C]: | ca 1500. |
| Density [kg/dm ³]: | ~ 5 |
| Viscosity: | Not applicable. |
| Solubility in water: | Insoluble. |
| Flash point [°C]: | Not applicable. |
| Explosion limits: | Not applicable. |

10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|---|
| Stability: | Stable under normal conditions (< 300°C). |
| Materials to avoid: | Contact with chemical substances like acids ou bases could cause generation of gas. |
| Hazardous decomposition products: | Formation of dangerous fumes during use. Welding fumes are classified carcinogen by the IARC (International Agency for Research on Cancer) : Group 2B Cancer suspected agent. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. |
| Fume Data Sheet: | According to process conditions, hazardous decomposition products may be generated. These hazardous products could include those from the reaction or oxidation of the components listed in section 3 or included in base material. |
| Fumes Emission Rate: | The amount of fumes generated change with the welding parameters and the diameters of the consumable. Refer to applicable national exposure limits for fume compounds and national exposure limits for fumes. |
| Fumes analysis: | Fumes generated by this covered electrode contain compounds indicated in section n.8. |
| Other information: | In case of work on parts covered by coatings such as : Lubricant, Solvent, Paint, Metallic compounds, Grease, etc... The thermal or photochemical decomposition products of these elements cumulate with the dusts and fumes emitted by the melting of the welding product. The solution to adopt must be, in any case, preceded by a spot study. Refer to the document "Health and Safety in Welding" published by the International Institute of Welding (IIS/IIW). |



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11. TOXICOLOGICAL INFORMATION

Toxicity information: This material is not toxic, its emissions may induce an allergic or sensitization reaction and thereby aggravate existing systemic disease.

Acute toxicity: Irritation to the respiratory tract and to other mucous membranes. Overexposure to welding fumes may cause : Nausea. Fever. Giddiness. Eye irritation.

Chronic toxicity: Overexposure to welding fumes may cause : Pulmonary/bronchial disease and/or cause breathing difficulty.

12. ECOLOGICAL INFORMATION

Ecological effects information: Avoid release to the environment. Do not discharge in sewer.

13. DISPOSAL CONSIDERATIONS

Disposal: Dispose in a safe manner in accordance with local/national regulations.

CER code for industrial waste number: 12.01.02 powder and particulate of ferrous materials, 12.01.13 welding wastes.

14. TRANSPORT INFORMATION

ADR/RID: Not regulate.

15. CLP REGULATORY INFORMATION

Symbol(s): Xn - Harmful.

R Phrase(s): R 40 - Limited evidence of a carcinogenic effect.
R 43 - May cause sensitization by skin contact.
R - 48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

S Phrase(s): S - 24 Avoid contact with skin.
S - 35 This material and its container must be disposed of in a safe way.
S - 36/37 Wear suitable protective clothing and gloves.
S - 51 Use only in well-ventilated areas

Labelling: According to the regulation (EC) 1907/2006, stainless steels containing 1% or more of nickel are classified in the same way as nickel. However the form in which product is placed on the market does not present a danger, such preparations do not require a label.

16. OTHER INFORMATION

Warning: Fumes and gases emitted during welding may be dangerous. Good ventilation of the workplace required.

Directive 2002/95/CE (ROHS): Can be used in the fabrication of electric and electronic devices.

Training advice: Ensure that user is aware of the potential hazards and knows what to do in the event of an accident or an emergency.

Recommended uses and restrictions: Contact your supplier in case of doubt.

The contents and the format of this safety data sheet comply with Regulation (EC) No 1907/2006 and 453/2010 of the European Parliament.

DISCLAIMER OF LIABILITY : The information in this sheet is based on the knowledge available when it was published. The user must ensure that the information is applicable and exhaustive for the application. The information contained in this sheet is only applicable for this product. The product must not be used for any application that is not allowed, in this case we will not be responsible for any damage caused. The user must respect current Safety, Health and Environmental legislation. This information concerns Safety and is not a substitute to the technical data of the product. This sheet cancels and replaces the previous ones.