SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

INEFIL 600

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

Gas shielding electric arc welding solid wire.

1.3 Details of the supplier of the safety data sheet

INE SpA, Via Facca 10, 35013 Cittadella (Padova), Italy
Tel. : +39 049/9481111
Fax: + 39 049/9400249
Internet: www.ine.it
E mail: ine@ine.it

1. 4 Emergency telephone number

INE SpA +39 049/9481111
Hours of operation: 8.30-12-30 and 13.30-17.30

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

This product doesn't meet the criteria of classification in any hazard class according to the applicable Regulations.

2.2. Label elements

No labelling applicable.

2.3 Other hazards

- Results of evaluation of PTB and vPvB substances: the solid wire does not meet the criteria for PBT or vPvB in accordance with Annex XIII.
- 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 f the device.
- Noise: Noises generated by welding equipment could damage auditory system.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Non applicabile.

3.2 Mixtures

The substances in the preparation are as follows:

Name of the substance	Range of concentration	CAS Number	EC Number	REACH Number	Hazard class	hazard statements
					According to European Regulation 1272/2008	
Iron	80 - 90 %	7439-89-6	231-096-4	01-2119462838-24	–	–
Cromium	7 - 11 %	7440-47-3	231-157-5	01-2119485652-31	–	–
Silicon	2 - 4 %	7440-21-3	231-130-8	–	–	–
Manganese	0.2 - 0.7 %	7439-96-5	231-105-1	01-2119449803-34	–	–

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Welding fume inhalation: assure fresh air breathing. Obtain medical attention if breathing difficulty persists.

Skin contact with hot metal: Flush with plenty of water. Seek medical advice. Seek medical attention if burns develop. Take off immediately all contaminated clothing.

Eye contact with hot metal: rinse immediately with plenty of water. Seek medical attention immediately. In case of burns from radiations, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See 2.3.

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable: powder, carbon dioxide.

Unsuitable: water.

5.2 Special hazards arising from the substance or mixture

The soild wire for arc welding process is not flammable.

5.3 Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2 Environmental precautions

Not applicable.

6.3 Methods and material for containment and cleaning up

Solid product: collect with mechanical equipments, sweep or shovel into suitable containers.

6.4 Reference to other sections

Section number 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

No special precautions necessary for solid wire in massive form. During its use, a system of aspiration system and/or ventilation such as to ensure the fulfillment of exposition standards shall be planned.
Do not eat, drink and smocking in the workplaces. Wash hands shower when leaving the working areas. Remove contaminated clothes and protective equipment before to enter in the areas where you eat.

7.2 Conditions for safe storage, including any incompatibilities

Avoid the contact with chemical substances like acids or bases

High-density solid product. Avoid storage in unstable positions

7.3 Specific end use(s)

Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

The following substances may be produced during the welding process in the fume:

Substance	CAS Number	TLV-TWA [mg/m³] *	Gestis Limit value (8 h) [mg/m³] **
Fe oxides (powder and fumes as Fe)	1309-37-1	5	5
Manganese and inorganic compounds (as Mn)	7439-96-5	0.2	0.2
Manganese, fume or respirable dust	7439-96-5		0.2
Silicon oxides (as Si fumes)	69012-64-1	2	
Particles not otherwise classified (PNOC)		3	
Ozone	10028-15-6	0.2	0.2
Chrome powder and Chrome III		0.5	

* References of TLV limit values taken from “Giornale degli Igienisti Industriali”, april 2011 *.

** Reference IFA limit values taken from IFA ((Institute for Occupational Safety and Health). Date of update: June 2016

8.2 Exposure controls

- 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.
- It is recommended to use of Exposure Scenario in addition to the provided information.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

PROPERTIES	VALUE
Appearance:	Solid, copper
Odour	Odourless
Odour threshold;	Not applicable
pH	Not applicable
Melting point/freezing point [°C]	ca 1500 / Not applicable
Initial boiling point and boiling range	No data available
Flash point;	No data available
Evaporation rate;	No data available
Flammability (solid, gas);	No data available
Upper/lower flammability or explosive limits;	No data available
Vapour pressure;	No data available
Vapour density;	No data available
Relative density [kg/dm3]	~ 7,8
Solubility(ies);	No data available
Partition coefficient: n-octanol/water;	No data available
Auto-ignition temperature;	No data available
Decomposition temperature;	No data available
Viscosity;	No data available
Explosive properties	No data available
Oxidising properties.	No data available

9.2 Other information

No additional information available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

None under normal conditions.

10.2 Chemical stability

Stable under normal conditions (< 300°C).

10.3 Possibility of hazardous reactions

None under normal conditions.

10.4 Conditions to avoid

None under normal conditions.

10.5 Incompatible materials

Contact with chemical substances like acids or bases, this product could cause generation of gas.

10.6 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. The amount of fumes generated change with the welding parameters and the diameters of the consumable; it could be develop from the reaction of oxidation of the components listed in section 3 or included in the base material.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	See Section 8 and 10 for welding fumes
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	See Section 8 and 10 for welding fumes
Aspiration hazard	Not classified

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

12.2 Persistence and degradability

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

12.3 Bioaccumulative potential

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

12.4 Mobility in soil

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

12.5 Results of PBT and vPvB assessment

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

12.6 Other adverse effects

The solid wires, in massive form, don't present hazards to the environment. Avoid the condition that can lead to their corrosion and the release of the metals in the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Regional legislation (waste): Dispose in a safe manner in accordance with local/national regulations.
Waste code for the industrial waste according to Commission Decision 2014/955/EU:

- 12 01 02: powder and particulate of ferrous materials.
- 12 01 13: welding wastes.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number:

Product is not classified as dangerous good for transport and have no UN number

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

The product is 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

No additional information available..

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

Further rules, limitations and legal prescriptions: Directive ROHS 2011/65. Can be used in the fabrication of electric and electronic devices.

15.2 Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

The contents and the format of this safety data sheet comply with the Commission Regulation (EU) 2015/830, Regulation (EC) No. 1907/2006 and Regulation (EC) No 1272/2008 (CLP Regulation).

LEGEND:

- ✓ PBT: persistent, bioaccumulative and toxic;
- ✓ vPvB: very persistent and very bioaccumulative;
- ✓ TLV-TWA: threshold limit value - time weighted average;

BIBLIOGRAPHY

- ✓ Commission Regulation (EU) 2015/830;
- ✓ Regulation (EC) No 1907/2006;
- ✓ Regulation (EC) No 1272/2008;
- ✓ Guidance on the compilation of safety data sheets, Version 3.1 November 2015;
- ✓ http://echa.europa.eu;
- ✓ http://limitvalue.ifa.dguv.de;
- ✓ European Welding Association: recommendations for Exposure Scenarios, Risk Management Measures and to Welding Exposure Scenario WES 2011;
- ✓ 2014/955/EU: Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council Text with EEA relevance

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.

EXPOSURE SCENARIO

Welding Exposure Scenario WES - ENGL **EWA2011**

Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded

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 by the Safety Data Sheet, issued in accordance with REACH, by the welding consumable manufacturer.

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.

In the table "Risk Management Measures for individual process / material combinations" below, reference is made to the following standards for collective and personal protection measures:

ISO 4063	Welding process Reference Numbers according to ISO 4063
EN ISO 15012-1:2004	Health and safety in welding and allied processes - Requirements testing and marking of equipment or air filtration - Part 1: Testing of the separation efficiency for welding fume
EN ISO 15012-2:2008	Health and safety in welding and allied processes - Requirements, testing and marking of equipment for air filtration - Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles
EN 149:2001	Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking (FFP1 - FFP2 - FFP3)
EN 1835:2000	Respiratory protective devices. Light duty construction compressed air line breathing apparatus incorporating a helmet or a hood. Requirements, testing, marking (LDH1 - LDH2 - LDH3).
EN 12941:1998	Respiratory protective devices. Powered filtering devices incorporating a helmet or a hood. Requirements, testing, marking (TH1 - TH2 - TH3).
EN 143:2000	Respiratory protective devices — Particle filters — Requirements, testing, marking (P1, P2, P3)
Directive 1998/24/EC	Article 6.2 on the protection of the health and safety of workers from the risks related to chemical agents at work
BGR 190	Benutzung von Atemschutzgeräten (Berufsgenossenschaftliche Regel für Sicherheit und Gesundheit bei der Arbeit)
TRGS 528	Schweisstechnische Arbeiten (Technische Regeln für Gefahrstoffe)

Also in the table "Risk Management Measures for individual process / material combinations", reference is made to footnotes.
The description of these footnotes:

1 Class: approximate ranking to mitigate risk by selecting process/material combinations with the lowest value. Identified collective and individual risk management measures shall be applied
2 Personal Protective Equipment (PPE) required avoiding exceeding the National Exposure Limit Value (DC: Duty cycle expressed on 8 hours)
3 General Ventilation (GV) Low. With additional Local Exhaust Ventilation (LEV) and extracted air to the outside, the GV or LEV capacity may be reduced to 1/5 of the original requirement.
4 General Ventilation (GV) Medium (double compared to Low)
5 Filtrating half mask (FFP2)
6 When an alloyed consumable is used, measures from "Class V" are required
7 General Ventilation (GV) Low. When no Local Exhaust Ventilation, the ventilation requirement is 5-fold
8 Filtrating half mask (FFP3), helmet with powered filters (TH2/P2), or helmet with external air supply (LDH2)
9 Reduced (negative) pressured Area: A separate, ventilated area where reduced (negative) pressure, compared to the surrounded area, is maintained
10 Local Exhaust Ventilation (LEV) High, extraction at source (includes table, hood, arm or torch extraction)
11 Helmet with powered filters (TH3/P3), or helmet with external air supply (LDH3)
12 Local Exhaust Ventilation (LEV) Low, extraction at source (includes table, hood, arm or torch extraction)
13 Local Exhaust Ventilation (LEV) Medium, extraction at source (includes table, hood, arm or torch extraction)
14 Recommended measures to comply with national maximum allowable limits. Extracted fumes, for all materials except unalloyed steel and aluminium, shall be filtered before release in the outside environment.
15 A confined space, despite its name, is not necessarily small. Examples of confined spaces include ship, silos, vats, utility vaults, tanks, etc.
16 Improved helmet, designed to avoid direct flow of welding fumes inside
n.a. Not applicable
n.r. Not recommended

Welding Exposure Scenario WES - ENGL **EWA2011**

Risk Management Measures for individual process / base material combinations

Class[1]	Process (according to ISO 4063)	Base Materials	Remarks	Ventilation / Extraction / Filtration[14]	PPE[2] DC<15%	PPE[2] DC>15%
Non-confined space[15]						
I	GTAW 141	All	Except Aluminium	GV low[3]	n.r.	n.r.
	SAW 12					
	Autogeneous 3					
	PAW 15					
	ESW/EGW 72/73					
	Resistance 2					
	Stud welding 78					
	Solid state 521					
	Gases Brazing 9	All	Except Cd- alloys	GV low[3]	n.r.	n.r.
II	GTAW 141	Aluminium	n.a.	GV medium[4]	n.a.	FFP2[5]
III	MMAW 111	All	Except Be-, V- , Mn-, Ni- alloys and Stainless[6]	GV low[7] LEV low[12]	Improved helmet[16]	FFP2[5]
	FCAW 136/137	All	Except Stainless and Ni- alloys [6]			
	GMAW 131/135	All	Except Cu-, Be-, V-alloys[6]			
	Powder Plasma Arc 152	All	Except Be-, V-, Cu- , Mn-, Ni-alloys and Stainless [6]			
IV	All processes class I	Painted / primed / oiled	No Pb containing primer	GV low[3]	FFP2[5]	FFP3, TH2/P2, or LDH2[8]
	All processes class III	Painted / primed / oiled	No Pb containing primer	GV low [7] LEV low[12]		
V	MMAW 111	Stainless, Ni-, Be-, and V-alloys	n.a.	LEV high[10]	TH3/P3, LDH3[11]	TH3/P3, LDH3[11]
	FCAW 136/137	Stainless, Mn- and Ni-alloys				
	GMAW 131	Cu-alloys				
	Powder Plasma Arc 152	Stainless, Mn-, Ni-, and Cu- alloys				
VI	GMAW 131	Be-, and V-alloys	n.a.	Reduced (negative) pressured area [9] LEV low[12]	TH3/P3, LDH3[11]	TH3/P3, LDH3[11]
	Powder Plasma Arc 152					
VII	Self shielded FCAW 114	Un-, high alloyed steel	Cored wire, not containing Ba	Reduced (negative) pressured area [9] LEV medium[13]	TH3/P3, LDH3[11]	TH3/P3, LDH3[11]
	Self shielded FCAW 114	Un-, high alloyed steel	Cored wire, containing Ba	Reduced (negative) pressured area [9] LEV high[10]		
	All	Painted / primed	Paint / Primer containing Pb			
	Arc Gouging and Cutting 8	All	n.a.			
	Thermal Spray	All	n.a.			
	Gases Brazing 9	Cd- alloys	n.a.			
Closed system or Confined space[15]						
I	Laser Welding 52	All	Closed system	GV medium[4]	n.a.	n.a.
	Laser Cutting 84					
	Electron Beam 51					
VIII	All	All	Confined space	LEV high[10] External air supply	LDH3[11]	LDH3[11]