

## TG100/1.V2, TG100/4.V2 GASLESS MIG WIRE

### 1. SUPPLIER / NAME OF PRODUCT

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**Name Of Product:** Flux Cored MIG Wire (0.9kg & 4.5kg) 0.9mm A5.20 Class E71T-GS

### 2. COMPOSITION/INFORMATION OF INGREDIENTS

Symbol	Chemical Name	% WT
Fe	Iron	75-95%
CaCO <sub>3</sub>	Calcium Carbonate	≤ 2%
Si	Silicon	≤ 4%
Mo	Molybdenum	≤ 1%
Al	Aluminium	≤ 2%
Mn	Manganese	≤ 4.5%
MgO	Magnesium Oxide	≤ 3%
Cu	Copper	≤ 1%
SiO <sub>2</sub>	Silicon Dioxide	≤ 2%
TiO <sub>2</sub>	Titanium Dioxide	≤ 10%
CaF	Calcium Fluoride	≤ 5%
LiF	Lithium Fluoride	≤ 1%
BaF <sub>2</sub>	Barium Fluoride	≤ 5%

### 3. HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW:

These products consist of odourless, carbon steel sheath, with a flux core, which have a metallic lustre. There are no immediate health hazards associated with these products. These products are not reactive. If involved in a fire, these products may generate irritating fumes and a variety of metal oxides. Finely divided dusts of these products may result in explosive air/dust mixtures. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding. This product is used in electrical welding applications which present hazards of heat, spatter, radiation and electric shock.

#### ROUTES OF ENTRY:

During welding operations, the most significant route of over exposure is via inhalation of fumes.

#### POTENTIAL HEALTH EFFECTS:

##### EYES:

Contact with the rod form of these products can be physically damaging to the eye. Fumes generated during welding operations can be irritating to the skin and eyes. These products also contain a low level of Fluorspar, a fluoride compound. Thermal decomposition of this compound can generate fluoride compounds, which are toxic and can cause burns in extreme cases. Burns from fluoride compounds can be delayed. Contact with the molten core wire or rods will burn skin or eyes.

##### SKIN:

Contact of the rod form of these products with the skin is not anticipated to be irritating. Symptoms of skin over-exposure may include irritation and redness; prolonged or repeated skin over-exposures may lead to dermatitis. Though not a likely route of occupational exposure for these products, injection (via punctures or lacerations in the skin) may cause local reddening, tissue swelling, and discomfort.

##### INGESTION:

Ingestion is not anticipated to be a route of occupational exposure for this product.

##### INHALATION:

Inhalation of large amounts of particulates generated by these products during welding operations may be physically irritating and cause deposits of dust in nasal passages. Inhalation of large amounts of dusts or fumes of Iron, the main component of these products, can cause iron pneumoconiosis. Inhalation of dusts and fumes of Iron can also cause metal fume fever. Symptoms of metal fume fever include flu-like symptoms, metallic taste, fever, chills, cough, weakness, chest pain, muscle pain, cardiac abnormalities, and increased white blood cell count. Damage to lungs can occur. Symptoms of metal fume fever can be delayed 24-48 hours. Thermal decomposition can result in generation of fluoride compounds, which in high enough concentration, can cause burns to the respiratory system and possible pulmonary oedema in severe cases. Chronic inhalation of dusts and fumes of Iron, the main component of these products can result in deposition of iron in body tissues (siderosis), with symptoms of fibrosis of the pancreas, diabetes mellitus and liver cirrhosis. Chronic inhalation of fumes of Manganese can cause a condition known as "Manganism". Symptoms include central nervous system effects such as tremors, muscle weakness, and behavioural changes. Chronic inhalation of fumes of Calcium Carbonate, a minor component of this product, can result in a condition known as hypocalcaemia, characterised by elevated Serum Calcium levels, increased density of the skeleton, mental deterioration and possible adverse effects on the renal system. Refer to Section 10 (Stability and Reactivity) for information on the specific composition of welding fumes and gases.

**ACUTE HEALTH HAZARDS:**

Inhalation of large amounts of particulates generated by these products during metal processing operations may be physically irritating and cause deposits of dust in nasal passages. Inhalation of dusts and fumes of Iron (the main component of these products) can cause metal fume fever. Contact with the molten material will burn contaminated skin or eyes. In extreme cases, burns may occur from contact with fluoride compounds that are generated during thermal decomposition.

TARGET ORGANS: For fumes: Skin, eyes, respiratory system.

**CHRONIC HEALTH HAZARDS:**

Chronic skin over-exposure to the fumes of these products during welding operations may produce dermatitis (red, inflamed skin). Repeated or prolonged over-exposures, via inhalation, to the dusts generated by these products may cause pulmonary fibrosis (scarring of lung tissue). Chronic inhalation of fumes or dusts of the components of these products can result in conditions such as hypocalcaemia, and manganism. Adverse effects or damage to the liver, lungs, pancreas, renal system and central nervous system can occur.

TARGET ORGANS: For fumes: Skin, central nervous system, pancreas and liver.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**

Skin, respiratory disorders, pancreas and liver disorders may be aggravated by prolonged over-exposures to the dusts or fumes generated by these products.

**4. FIRST AID MEASURES****EYES:**

If fumes generated by welding operations involving this product enter the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek immediate medical attention.

**SKIN:**

If fumes generated by welding operations involving this product contaminate the skin, begin decontamination with running water. If molten material contaminates the skin, immediately begin decontamination with cold, running water. Minimum flushing is for 15 minutes. Victim must seek medical attention if any adverse reaction occurs.

**INGESTION:**

If swallowed call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if person is unconscious, having convulsions, or not breathing.

**INHALATION:**

If fumes generated by welding operations involving this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:**

Treat symptoms and eliminate overexposure. Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.

**5. FIRE-FIGHTING MEASURES**

**FLAMMABLE LIMITS IN AIR, UPPER:** Not applicable

**(% BY VOLUME) LOWER:** Not applicable

**FLASH POINT:** Not flammable

**AUTOIGNITION TEMPERATURE:** Not flammable

**NFPA HAZARD CLASSIFICATION**

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

**EXTINGUISHING MEDIA:**

These products are not flammable; use fire-extinguishing agents appropriate for surrounding materials.

Water Spray, Carbon Dioxide, Halon, Foam, Dry Chemical, Any "ABC" Class.

**SPECIAL FIRE FIGHTING PROCEDURES:**

Not applicable

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

The hot material can present a significant thermal hazard to firefighters.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

When involved in a fire, these products may decompose and produce iron fumes, a variety of nickel, iron and a variety of metal compounds and metal oxides.

**6. ACCIDENTAL RELEASE MEASURES** Wear appropriate gloves when handling welding wires. Avoid contact with dusts. Avoid contamination of water systems.

**7. HANDLING AND STORAGE** Store packages in a cool, dry location. Store away from incompatible materials (see Section 10, Stability and Reactivity). All employees who handle this product should be trained to handle it safely. Use in a well ventilated location. Avoid breathing fumes of this product during welding operations. Open containers on a stable surface. Packages of this product must be properly labelled. When this product is used during welding operations, read and understand the manufacturer's instructions and your employers' safety practices.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION** **ENGINEERING CONTROLS:**  
Prudent practice is to ensure eye wash/safety shower stations are available near areas where this product is used.

**VENTILATION:**  
Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients).

**RESPIRATORY PROTECTION:**  
Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients). Respiratory Protection is recommended to be worn during welding operations, (i.e. a Weld Fume Respirator, or Air-Line Respirator for welding in confined spaces). In low oxygen atmospheres, use of a full facepiece, supplied air respirator with auxiliary self-contained air supply is recommended.

**EYE PROTECTION:**  
Safety glasses. When these products are used in conjunction with welding, wear safety glasses, goggles, or face-shield with filter lens of appropriate shade number.

**SKIN PROTECTION:**  
Wear gloves for routine industrial use. When these products are used in conjunction with welding, wear gloves that protect from sparks and flame.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:**  
Use body protection appropriate for task.

**WORK HYGIENE PRACTICES:**  
As with all chemicals, avoid getting this product on you or inhaling it. Wash thoroughly after handling this product. Do not eat or drink whilst handling this product. Use ventilation and other engineering controls to minimise potential exposure to this product. Ensure all PPE is compliant with appropriate EN or local standards.

<b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b>	<b>APPEARANCE:</b>	These odourless products consist of carbon steel sheath, with a flux core, which have a metallic lustre.
	<b>ODOUR:</b>	Not applicable
	<b>pH AS SUPPLIED:</b>	Not applicable
	<b>MELTING POINT:</b>	1450°C
	<b>VAPOUR PRESSURE (mmHg):</b>	@ 1787°C = 1
	<b>VAPOUR DENSITY (AIR=1):</b>	Not applicable
	<b>SPECIFIC GRAVITY (H2O=1):</b>	@ 20°C = 7.86
	<b>EVAPORATION RATE:</b>	Not applicable
	<b>SOLUBILITY IN WATER:</b>	Insoluble

**10. STABILITY & REACTIVITY** **STABILITY:** This product is stable.

**CONDITIONS TO AVOID (STABILITY):**  
Avoid uncontrolled exposure to extreme temperatures and incompatible materials.

**INCOMPATIBILITY (MATERIAL TO AVOID):**  
As solids, these products will be attacked by strong acids, strong bases, Hydrogen Peroxide (52% or greater- in presence of Manganese Dioxide). Hot iron wire burns in Chlorine gas. Dusts of these products would be incompatible with strong Oxidisers, Acetaldehyde, Ammonium Peroxodisulphate, Chloroformamidinium, Chloric acid, Ammonium Nitrate, Halogens, Dinitrogen Tetroxide, Nitryl Fluoride, Polystyrene, Sodium Acetylide, Potassium Dichromate, Peroxyformic acid, and Sodium Carbide.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:**

Fluoride and calcium compounds and metal oxides.

**NOTE:** The composition and quality of welding fumes and gases are dependent upon the metal being welded, the process, the procedure, and the electrodes used. Other conditions that could also influence the composition and quantity of fumes and gases to which workers may be exposed include the following: any coatings on metal being welded (e.g. paint, plating, or galvanising), the number of welders and the volume of the work area, the quality of ventilation, the position of the welder's head with respect to the fume plume, and the presence of other contaminants in the atmosphere. When the electrode is consumed, the fume and gas decomposition products generated are different in percentage and form from the ingredients listed in Section 2 (Composition and Information on Ingredients). Fume and gas decomposition products, and not the ingredients in the electrode, are important. Concentration of the given fume or gas component may decrease or increase by many times the original concentration. New compounds in the electrode may form. Decomposition products of normal operations include not only those originating from volatilisation, reaction, or oxidation of the product's components, but also those from base metals and any coating (as noted previously). The best method to determine the actual composition of generated fumes and gases is to take an air sample from inside the welder's helmet if worn or in the breathing zone.

**HAZARDOUS POLYMERISATION: Will not occur**

**11. TOXICOLOGICAL INFORMATION****RISK PHRASES:**

**SAFETY PHRASES:** Keep container tightly closed and dry.

**SYMBOL(S):**

**12. ECOLOGICAL INFORMATION****RISK PHRASES:**

**SAFETY PHRASES:** Avoid release to the environment. Refer to special instructions.

**SYMBOL(S):**

**13. DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD:**

Waste disposal must be in accordance with appropriate local authority regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Dispose of in an environmentally responsible manner.

**RCRA HAZARD CLASS:**

**14. TRANSPORT INFORMATION**

**ROAD TRANSPORTATION PROPER SHIPPING NAME:** Not applicable.

**WATER TRANSPORTATION PROPER SHIPPING NAME:** Not applicable.

**AIR TRANSPORTATION PROPER SHIPPING NAME:** Not applicable.

**15. REGULATORY INFORMATION****RISK PHRASES:**

**SAFETY PHRASES:** 7, 61

**INDICATION(S) OF DANGER:**

**WATER HAZARD CLASS:**

**CHEMICAL INVENTORY:** Substances in this preparation are on the EINECS inventory.

**16. OTHER INFORMATION**

The information supplied in this Safety Data Sheet is designed only as guidance for safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication, however no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials in any other process.