



**MATERIAL
SAFETY
DATA SHEET**

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Identification of the Substance/Preparation

Substance or preparation trade name: Flux Cored Gasless Wire

Unique Reference Numbers

MWFC08, MWFC508, MWFC09, MWFC509

Composition

Definition: Alloy of metals and other elements with a mineral filling.

Dangerous substances:

C.A.S. No.	Substance	Percentage	Symbol
7429-90-5	Aluminium (Al)	<2	AL
471-34-1	Calcium Carbonate	<2	CaCO ₃
7440-50-8	Copper	<1	Cu
7789-75-5	Fluorspar	<5	CaF
7439-89-6	Iron	75-95	Fe
7789-24-4	Lithium Fluoride	<2	LiF
7439-95-4	Magnesium	<3	Mg

Hazards Identification

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

Most important hazards:

Inhalation of fume and metal dusts during welding. 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 causes. 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 hypercalcemia, characterized by elevated serum calcium levels, increased density of the skeleton, mental deterioration and possible adverse effects on the renal system.

Refer to Stability and Reactivity for information on the specific composition of welding fumes and gases

First Aid Measures

General Advice: Do not intentionally inhale or misuse product. Only use the product for the application for which it has been formulated and designed.

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.

Skin Contact: 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.

Eye Contact: 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.

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.

Firefighting Measures

Extinguishing media: water, Foam, CO2, Powder

Fire hazards: None.

Protective equipment: Wear suitable respiratory equipment when necessary.

Accidental Release Measures

Personal precautions: Not applicable

Handling and Storage

Respiratory Protection: No special measures necessary. As with all pressurised products take care to avoid spray or contents being inhaled when airborne.

Handling: No special handling measures necessary. Wash thoroughly after handling this product. Do not eat or drink while handling this product

Storage: Store securely to ensure no risk of injury from falling coils of wire

Exposure Controls

Exposure Limits: (Individual substances)

C.A.S. No.	Substance	Exposure limits
7429-90-5	Aluminum (Al)	4mg m3
471-34-1	Calcium Carbonate	10mg m3
7440-50-8	Copper	0.075mg m3
7789-75-5	Fluorspar	2.5mg m3
7439-89-6	Iron	5mg m3
7789-24-4	Lithium Fluoride	Not listed
7439-95-4	Magnesium	Not listed

Engineering measures: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided. Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used.

Hand protection: Chemical resistant gloves (PVC) Wash hands thoroughly after use and before handling food. Do not smoke or eat food whilst using the product. Keep product away from food and drinks. Wear gloves for routine industrial use. When these products are used in conjunction with welding, wear gloves that protect from sparks and flame

Respiratory Protection: Maintain airborne contaminant concentrations below guidelines listed above. Respiratory Protection is recommended to be worn during welding operations.

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

Body Protection: Use body protection appropriate for task.

Physical and Chemical Properties

Physical form:	Tubular wire in coils
Appearance:	Carbon steel sheath, with a flux core, which have a metallic lustre.
Odour:	Odourless
Water solubility	Insoluble
Melting Point:	1535°C (2789.6°F)

Stability and Reactivity

Stability Stable

Decomposition 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 galvanizing), 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 percent and form from the ingredients listed in the composition. 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 volatilization, 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 breathing zone.

Materials these products are incompatible with:

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 oxidizers, acetaldehyde, ammonium peroxodisulfate, chloroformamidinium, chloric acid, ammonium nitrate, halogens, dinitrogen tetroxide, nitril fluoride, polystyrene, sodium acetylide, potassium dichromate, peroxyformic acid, and sodium carbide

Toxicological Information

Presented below are human toxicological data available for the components of these products present in concentration greater than 1%. Other data for animals are available for the components of these products, but are not presented in this Material Safety Data Sheet.

IRON:

TDLo (oral, child) = 77 mg/kg; BAH, tract, blood effects

MANGANESE:

TCLo (inhalation-man) 2.3 mg/m³ gastrointestinal Brain and Central Nervous System effects

TITANIUM DIOXIDE:

Standard Draize Test (Skin-Human) 300 mg/3 g days-intermittent: Mild irritation effects

COPPER: TDLo(Oral-Human) =120 mg/kg:

Gastrointestinal tract effects

SILICA:

TCLo (inhalation, human) = 16 mppcf/ 8 hours/17.9 years/ intermittent; pulmonary system effects LCLo, (inhalation, human) = 300 |xg/m³/ 10 years/ intermittent; systemic effects

SUSPECTED CANCER AGENT: The components of these products are listed as follows:

FLUOROSPAR (as a Fluoride Compound): IARC-3 Possibly Carcinogenic to Humans); ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen)

IRON (as Iron Oxide): IARC-3 Possibly Carcinogenic to Humans); ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen)

LITHIUM FLUORIDE (as a Fluoride Compound): IARC-3 Possibly Carcinogenic to Humans); ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen)

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SILICA: ACGIH TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); NIOSH-Ca (Potential Occupational Carcinogen with no Further Categorization); NTP-R (Reasonably Anticipated to be a Human Carcinogen (limited evidence of carcinogenicity from studies in humans, which indicates that causal relationship is credible); MAK-1 (Substances that Cause Cancer in Man and Which Can Be Assumed to Make a Significant Contribution to Cancer Risk). The information on quartz is pertinent to inhalation of quartz particulates, which is not a likely route of exposure for this component as it exists in this product.

STRONTIUM FLUORIDE (as a Fluoride Compound): IARC-3 Possibly Carcinogenic to Humans); ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen)

TITANIUM DIOXIDE: IARC Group 3 (Not Classifiable as to Carcinogenicity to Humans), NIOSH-Ca (Potential Occupational Carcinogen with no further categorization), ACGIH-TLV-A4 (Not Classifiable as a Human Carcinogen)

Ecological Information

Degradability: The components of these products occur naturally in the environment and are expected to persist in the environment for an extended period of time. Components of these products will react with water and air to form a variety of stable metal oxides.

Eco Toxicological Effects: These products are not expected to cause adverse effects on plant or animal life. Animal studies on copper, manganese indicate various health effects after ingestion and exposures. Further harmful ecological Information: None known.

Disposal Considerations

General information Dispose of in compliance with all local and national regulations.

Disposal methods Contact a licensed waste disposal company. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

Disposal of packaging Empty containers can be sent for disposal or recycling.

Transport Information

ADR/RID	Not applicable
IMDG	Not applicable
IATA	Not applicable

Further information the product is not classified as dangerous for carriage.

Regulatory Information

Risk Phrase: R11 ,R15 Safety Phrase: S2,S7/8, S43

Other Information

The information supplied in this Safety Data Sheet is designed only as guidance for the 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 or in any other process.