

## 11. TOXICOLOGICAL INFORMATION:

**Signs and Symptoms of Overexposure:** Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contaminants and processes. The Internal Agency for Research on Cancer has classified welding fumes as possible carcinogenic to humans (Group 2B).

**Acute Effects:** Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. May cause sensitisation by skin contact.

LD/LC50 Values that are relevant for classification		
Cellulose 9004-34-6		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

LD/LC50 Values that are relevant for classification		
Manganese 7439-96-5		
Oral	LD50	9000 mg/kg (rat)

LD/LC50 Values that are relevant for classification		
Titanium Dioxide 13463-67-7		
Oral	LD50	>10000 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rabbit)

LD/LC50 Values that are relevant for classification		
Iron 7439-89-6		
Oral	LD50	30000 mg/kg (rat)

**Chronic Effects:** Overexposure to welding fumes may affect pulmonary function and eyes. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait. Prolonged inhalation of titanium dioxide (Classified 2B by IARC) above safe exposure limits can cause cancer.

## 12. ECOLOGICAL INFORMATION:

**Toxicity:** Welding rods contain metals which are considered to be very toxic towards aquatic organisms. Finely divided welding rods are therefore considered harmful to aquatic organisms.

**Persistence and Degradability:** The welding rods consist of elements that can not degrade any further in the environment.

**Bio accumulative Potential:** Welding rods contain heavy metals which bio accumulates in the food chain. The following figures are the bio concentration factor (BCF) for the substances on their own.

BCF:

Iron, BCF: 140000

Manganese, BCF: 59052

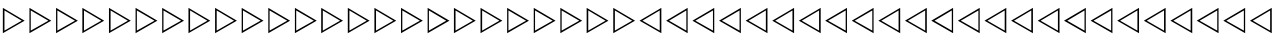
**Mobility in Soil:** Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

**Other Adverse Effects:** In massive form, welding rods present no hazards to the aquatic environment.

Welding materials could degrade into components originating from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety  
Data  
Sheet**

**Titan Alloy Products**



**13. DISPOSAL CONSIDERATIONS:**

**Product:** For product elimination, consult recycling companies or appropriate local authority.  
**USA RCRA:** This product is not considered hazardous waste if discarded. Residue from welding consumables and processes could degrade and accumulate in soils and groundwater.  
**Package:** May be disposed in approved landfills provided local regulations are observed.

**14. TRANSPORT INFORMATION:**

**UN-number:** Welding rods are not classified as dangerous goods for transport and has no UN number.  
**UN proper shipping name:** Welding rods are not classified as dangerous goods for transport and has no UN proper shipping name.  
**Transport hazard class:** Welding rods are not classified as dangerous goods for transport.  
**Packing group:** There are not 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 premises.  
**Environmental hazards:** Welding rods are not environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and AND) and/or a marine pollutant to the IMDG Code.  
**Special precautions for users:** There are not any special precautions which a user should or must comply or be aware of in connection with transport or conveyance either within or outside premises of the welding rod.  
**Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code:** Welding rods in massive form do not subject under MARPOL 73/78 and the IBC Code. Not applicable – product is transported only in packaged form.

**15. REGULATORY INFORMATION:**

**Safety, health and environment regulations/legislation specific for the substance or mixture:** Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.  
**Warning:** Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. Electric shock can kill. Arc rays and sparks can injure eyes and burn skin. Wear correct hand, head, eye and body protection.  
**Chemical safety assessment:** No  
USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous. This product contains or produces a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code § 25249.5 et seq.) United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.  
**EPCRA/SARA Title III Toxic Chemicals**  
The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA reporting. See Section 3 for weight percentage.

Ingredient Name	Disclosure Threshold
Manganese	5 mg/m3

**16. OTHER INFORMATION:**

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.  
This Material Safety Data Sheet complies with the EC directives 91/155/EEC and 93/112/EEC, including modifications 2001/58/EC.  
Complies with OSHA Communication Standard 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H351** – Suspected of causing lung cancer.

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

**R36/38** – Irritating to eyes and skin.

**R40** – Limited evidence of a carcinogenic effect.

**R48 – Danger of serious damage to health by prolonged exposure.**

**S36/37** – Wear suitable protective clothing and gloves.

**S43** – In case of fire, use fire-fighting equipment on basis class D.

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