



# EQ WELDING SDN. BHD.

## SAFETY DATA SHEET

For Welding Consumables and Related Products

Conforms to Hazard Communication Standard 29CFR 1910.1200 Rev. October 1988

### SECTION I : IDENTIFICATION

**Supplier Name** : EQ WELDING SDN. BHD.  
**Address** : 16, JALAN SUNGAI BATU 11/KU6,  
 KAWASAN PERINDUSTRIAN SUNGAI PULOH,  
 42100 KLANG. SELANGOR. MALAYSIA.  
**Telephone No.** : +60 12 628 2809  
**Email** : [sales@eqwelding.com](mailto:sales@eqwelding.com)  
**Website** : [www.eqwelding.com](http://www.eqwelding.com)  
**Product Type** : Stainless Steel Flux Cored Wire  
**Trade Name** : SS FCW EQ308L, SS FCW EQ309L, SS FCW EQ316L  
**Classification** : AWS A5.22 E308LT0-1/4, E308LT1-1/4  
 AWS A5.22 E309LT0-1/4, E309LT1-1/4  
 AWS A5.22 E316LT0-1/4, E316LT1-1/4

### SECTION II : COMPOSITION AND INGREDIENTS

**IMPORTANT:** This section covers the materials from which this product is manufactured. CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.

No.	Ingredient	CAS No.	W%		
			EQ308L	EQ309L	EQ316L
1	Titanium Dioxides	13463-67-7	4	4	4
2	Chromium & Chromium Alloys or Compounds (as Cr)	7440-47-3	4.5	4.5	4.5
3	Iron	7439-89-6	8	1.5	5
4	Nickel (metal)	7440-02-0	<1	3.5	2.5
5	Mineral Silicates	1332-58-7	1	1	1
6	Niobium Alloys (as Nb)	7440-03-1	---	---	---
7	Molybdenum Alloys (as Mo)	7439-98-7	---	---	---
8	Zirconium Alloys & Compounds (as Zr)	12004-83-0	3	3	3
9	Manganese and/or Manganese Alloys & Compounds (as Mn)	7439-96-5	1	1	1
10	Aluminium Oxide and/or Bauxite	1344-28-1	---	---	---
11	Silicon and/or Silicon Alloys & Compounds (as Si)	7440-21-3	<1	<1	<1
12	Aluminium and/or Aluminium Alloys (as Al)	7429-90-5	<1	<1	<1
13	Fluorides (as F)	7789-75-5	<1	<1	<1
14	Quartz	14808-60-7	2	2	2
15	Bismuth Metal & Compounds (as Bi)	7440-69-9	<1	<1	<1
16	Lithium Compounds (as Li)	544-13-2	<1	<1	<1
17	Stainless Steel Tube		75	75	75
18	Nominal Tube Composition:				
18a	Chromium	7440-47-3	18	18	20
18b	Nickel	7440-02-0	9	9	14
18c	Manganese	7439-96-5	2	2	2
18d	Molybdenum	7439-98-7	0.5	0.5	3
18e	Iron	7439-89-6	bal.	bal.	bal.

### SECTION III : HAZARD IDENTIFICATION

**Hazard overview:** The product is not considered hazardous as delivered. Put gloves on to avoid skin contact to prevent possible allergic reactions and cuts.

Some of these products contain nickel, which is classified as toxic by prolonged inhalation, a skin sensitizer and a suspect carcinogen. Chromium and nickel, and their compounds, are on the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) lists as posing a carcinogenic risk to humans. The product contains titanium dioxide which is possibly carcinogenic. In the form that these substances are present in the products, they do not contribute to a hazard classification of the products.

**Warning:**

Protect yourself and others. When this product is used for its intended purpose, fumes and gases produced as a by-product can be hazardous to your health. Aggravation of pre-existing respiratory or allergic conditions may occur in some workers. Arc rays can injure eyes and burn skin. Electric shock can kill.

**Short-term exposure:**

Metallic taste; nausea; tightness of chest; fever; irritation of eyes, nose, throat and skin; loss of consciousness/death due to welding gases or lack of oxygen.

**Long-term exposure:**

Adverse effects may result from long-term exposure to welding fume, gases, or dusts. These effects may include skin sensitization, neurological damage, and respiratory disease such as bronchial asthma, lung fibrosis or pneumoconiosis.

**Exposure limits:**

The ACGIH recommended exposure limit for total welding fumes is 5mg/m<sup>3</sup>. OSHA requires employers to ensure exposures below individual constituent PEL's (See Section 8). Determine actual exposure by industrial hygiene monitoring.

### SECTION IV : FIRST AIDS MEASURES

**Contact:**

**Eyes** : Non-hazardous, avoid contact to prevent injury.

**Skin** : Non-hazardous, avoid regular contact to prevent possible allergic reaction for certain people.

**Inhalation** : No possible for inhalation.

**Ingestion** : No possible for digestion.

IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

### SECTION V : FIRE FIGHTING MEASURES

**Flash point:**

This product is not flammable.

**Suitable extinguishing media:**

Use extinguishing measures that are appropriate to the surrounding environment.

**Potential hazard when contact with acids:**

Avoid contact with any kind of acids as the reaction of acids with iron content will release hydrogen gas. Accumulation of hydrogen in an enclosed environment may post a fire or explosion hazards.

**Potential hazard during welding:**

Welding arc and sparks can ignite combustibles and flammable products. Welding ray will cause skin burn for prolonged exposure.

Firefighters shall wear self-contained breathing apparatus to protect from fumes and vapors.

## SECTION VI : ACCIDENTAL RELEASE AND WASTE DISPOSAL

**Accidental release** : No major hazard.

**Waste disposal** : No special requirement and best solution is for sending it to scrap metal collector or manufacturer for recycling purpose.

## SECTION VII : HANDLING AND STORAGE

**Handling** : Avoid exposure to rain water as this will make product rusty and unusable

**Storage** : Store product indoor and avoid rain water. Keep it away from contacting with acids, which could release hydrogen gas (flammable) due to its chemical reaction with acids

## SECTION VIII : EXPOSURE CONTROLS AND PERSONAL HANDLING

**Overexposure to welding fume:**

Fumes and Gases can be dangerous to your health. Common entry is by inhalation.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function.

Arc Rays can injure eyes and burn skin. Skin cancer has been reported.

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with work piece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

**Use ventilation for removal of welding fume:**

Use air ventilation at point of usage (welding) to remove welding fumes. Suction or vacuum system is a preferred option. Points of suction should be close to the welding point.

**Personal Protective clothes and equipment:**

Wear head, hand, and body protection which help to prevent injury from radiation, sparks and electrical shock. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

Avoid welding rays to contact with eyes and skin. Wear long sleeve and dark glass when performing welding.

Use appropriate welding vest and appropriate hands glove to avoid contact with hot welding parts.

The following are the exposure limits by American Conference of Governmental Industrial Hygienists(ACGIH), and Occupational Safety & Health Administration(OSHA)

No.	Ingredient	CAS No.	ACGIH TLV, mg/m <sup>3</sup>	OSHA PEL <sup>(5)</sup> , mg/m <sup>3</sup>
1	Titanium Dioxides	13463-67-7	10	15
2	Chromium & Chromium Alloys or Compounds (as Cr) <sup>(3)</sup>	7440-47-3	0.5 <sup>(b)</sup>	1.0 <sup>(b)</sup>
3	Iron	7439-89-6	10 <sup>(1)</sup>	10 <sup>(1)</sup>
4	Nickel (metal) <sup>(3)</sup>	7440-02-0	1.5	1
5	Mineral Silicates	1332-58-7	5 <sup>(2)</sup>	5 <sup>(2)</sup>
6	Niobium Alloys (as Nb)	7440-03-1	NE <sup>(d)</sup>	NE <sup>(d)</sup>
7	Molybdenum Alloys (as Mo)	7439-98-7	10	15
8	Zirconium Alloys & Compounds (as Zr)	12004-83-0	5	5
9	Manganese and/or Manganese Alloys & Compounds (as Mn) <sup>(3)</sup>	7439-96-5	0.2	5 <sup>(c)</sup>
10	Aluminium Oxide and/or Bauxite	1344-28-1	10	15
11	Silicon and/or Silicon Alloys & Compounds (as Si)	7440-21-3	10 <sup>(1)</sup>	15 <sup>(1)</sup>
12	Aluminium and/or Aluminium Alloys (as Al) <sup>(3)</sup>	7429-90-5	10	15
13	Fluorides (as F)	7789-75-5	2.5	2.5
14	Quartz	14808-60-7	0.05 <sup>(2)(4)</sup>	0.1 <sup>(2)(4)</sup>
15	Bismuth Metal & Compounds (as Bi)	7440-69-9	10 <sup>(1)</sup>	15
16	Lithium Compounds (as Li)	544-13-2	10 <sup>(1)</sup>	15 <sup>(1)</sup>
17	Stainless Steel Tube			
18	Nominal Tube Composition:			
18a	Chromium <sup>(3)</sup>	7440-47-3	0.5 <sup>(b)</sup>	1.0 <sup>(b)</sup>
18b	Nickel <sup>(3)</sup>	7440-02-0	1.5	1
18c	Manganese <sup>(3)</sup>	7439-96-5	0.2	5 <sup>(c)</sup>
18d	Molybdenum	7439-98-7	10	15
18e	Iron	7439-89-6	10 <sup>(1)</sup>	10 <sup>(1)</sup>

**Supplemental information:**

(1) Not listed. The OSHA PEL for nuisance particles is 15 milligrams per cubic meter. The ACGIH guideline for total particulate is 10 milligrams per cubic meter. OSHA PEL value for iron oxide is 10 milligrams per cubic meter. ACGIH TLV value for iron oxides is 5 milligrams per cubic meter.

(2) As respirable dust.

(3) Subject to the reporting requirements of Sections 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(4) Crystalline silica (quartz) is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a carcinogenic risk to humans.

(5) Unless noted, all values are for 8 hour time weighted averages (TWA)

(a) Value is for manganese fume. Present PEL is 5 milligrams per cubic meter (ceiling value). Values proposed by OSHA in 1989 were 1.0 milligrams per cubic meter TWA and 3.0 milligrams per cubic meter STEL (Short Term Exposure Limit).

(c) The OSHA PEL for chromium (VI) is 5 micrograms (0.005 milligrams) per cubic meter. The TLV for water soluble chromium (VI) is 0.05 milligrams per cubic meter and the TLV for insoluble chromium (VI) is 0.01 milligrams per cubic meter.

(d) Not Established

## SECTION IX : PHYSICAL AND CHEMICAL PROPERTIES

Appearance: This product is a solid object, shaped as wire of various diameters with varying colour, and non-volatile. Melting point: Above 1000°C (above 1800°F)

## SECTION X : STABILITY AND REACTIVITY

**Stability:** This product is stable under normal conditions

**Reactivity:** Contact with mineral acids and oxidizing agents may generate hydrogen gas.

**Hazardous Polymerization:** Will Not Occur

**Hazardous decomposition products:** Welders are exposed to a range of fumes and gases. Fume particles contain a wide variety of oxides and salts of metals and other compounds, which are produced mainly from electrodes, and filler wire. Fumes from the welding of carbon steel contain compounds of following chemical elements: C, Mn, Cu, Ti, Fe, Mo. Ozone is formed during most electric arc welding, and exposures can be high in comparison to the exposure limit. Nitrogen oxides and carbon oxides are also expected as gaseous products during welding. Welders who weld painted mild steel can also be exposed to a range of organic compounds produced by pyrolysis.

## SECTION XI : TOXICOLOGICAL INFORMATION

The International Agency for Research on Cancer (IARC) identifies welding fumes as a possible carcinogenic to humans (Group 2B). Inhalation of welding fumes can be dangerous to welder health. Identification of welding fume is not easy because base materials and their coatings, welding processes, even air pollution degree are different.

**Immediate effect:** Overexposure to welding fumes can cause symptoms like nausea, dizziness irritation of eyes and nose.

**Chronic effect:** Overexposure to manganese and manganese compounds above safe limits may result in damage to the central nervous system, including brain. Symptoms like tremor, lethargy, spastic gait, and slurred speech may happen. Overexposure to welding fumes may influence pulmonary function.

Potential carcinogen evaluation among organization

No.	Ingredient	CAS No.	NTP <sup>(1)</sup>	IARC <sup>(2)</sup>	OSHA <sup>(3)</sup> List
1	Titanium Dioxides	13463-67-7	---	2B	---
2	Chromium & Chromium Alloys or Compounds (as Cr) <sup>(3)</sup>	7440-47-3	---	---	---
3	Iron	7439-89-6	---	---	---
4	Nickel (metal) <sup>(3)</sup>	7440-02-0	S	2B	---
5	Mineral Silicates	1332-58-7	K	1	---
6	Niobium Alloys (as Nb)	7440-03-1	---	---	---
7	Molybdenum Alloys (as Mo)	7439-98-7	---	---	---
8	Zirconium Alloys & Compounds (as Zr)	12004-83-0	---	---	---
9	Manganese and/or Manganese Alloys & Compounds (as Mn) <sup>(3)</sup>	7439-96-5	---	---	---
10	Aluminium Oxide and/or Bauxite	1344-28-1	---	---	---
11	Silicon and/or Silicon Alloys & Compounds (as Si)	7440-21-3	---	---	---
12	Aluminium and/or Aluminium Alloys (as Al) <sup>(3)</sup>	7429-90-5	---	---	---
13	Fluorides (as F)	7789-75-5	---	---	---
14	Quartz	14808-60-7	K	1	---
15	Bismuth Metal & Compounds (as Bi)	7440-69-9	---	---	---
16	Lithium Compounds (as Li)	544-13-2	---	---	---
17	Stainless Steel Tube				
18	Nominal Tube Composition:				
18a	Chromium <sup>(3)</sup>	7440-47-3	---	---	---
18b	Nickel <sup>(3)</sup>	7440-02-0	S	2B	---
18c	Manganese <sup>(3)</sup>	7439-96-5	---	---	---
18d	Molybdenum	7439-98-7	---	---	---
18e	Iron	7439-89-6	---	---	---

<sup>(1)</sup> NTP(National Toxicology Program, USA) : K - Known Carcinogen, S - Suspect Carcinogen

<sup>(2)</sup> IARC(The International Agency for Research on Cancer) : 1 - Carcinogenic to humans, 2A - Probably carcinogenic to humans,

2B - Possibly carcinogenic to humans

<sup>(3)</sup> OSHA(Occupational Safety & Health Administration, USA) : Carcinogen list

## SECTION XII : ECOLOGICAL INFORMATION

This product can degrade into components originating from this product or from the materials used in the welding process.

## SECTION XIII : DISPOSAL CONSIDERATION

Dispose of in accordance with local regulation.

Alternative is to sell wire to scrap metal dealer or send back to manufacturer for recycling.

**Waste Disposal Methods:** Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manor, in full compliance with federal state and local regulations.

## SECTION XIV : TRANSPORT INFORMATION

Follow local Department of Transport regulation.

Product is usually heavy and they must be securely fastened during transportation and covered from rain water.

## SECTION XV : REGULATORY INFORMATION (NON-MANDATORY)

**SARA Title III:** Not Applicable. However, large users may need to calculate and add their welding fume emissions to their inventory of the toxic emissions, using the material percentages listed in Section 1.

**TSCA:** All material contained within this product are on the TCSA Inventory List.

**California Proposition 65 Warning:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the state of California to cause cancer (California Health & Safety Code § 25249.6).

### LABELING (Precautionary Statements):

#### WARNING:

- PROTECT yourself and others.
  - Read and understand this information.
  - FUMES AND GASES can be hazardous to your health.
  - ARC RAYS can injure eyes and burn skin.
  - ELECTRIC SHOCK can KILL.
- Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDS), and your employer's safety practices.
  - Keep your head out of the fumes.
  - Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
  - Wear correct eye, ear, and body protection.
  - Do not touch live electrical parts

## SECTION XVI : OTHER INFORMATION

### SDS NOTES:

(1) Threshold Limit Value (TLV): 8-hour TWA as defined by American Conference of Governmental Industrial Hygienists (ACGIH).

(2) Permissible Exposure Limit (PEL): 8-hour TWA exposure as defined by OSHA (29CFR1910)

(3) Recommended Exposure Limit (REL) : 8-hour TWA as defined by National Institute of Occupational Safety & Health (NIOSH)

(4) Short Term Exposure Limit (STEL) : 15 minute TWA exposure as defined by OSHA (29CFR1910.1200) or certain state regulations

(5) Immediately Dangerous to Life & Health (IDLH): As defined by OSHA and NIOSH.

(6) Ceiling Value (C): Exposure which shall not be exceeded at any time during the working day.

### Training:

Workers should be informed and trained in the proper use and handling of this product as required under the respective local regulations.

**Liability:**

The information furnished here was gathered with the greatest care, and the knowledge available on the date of issue. It does not include any warranties or responsibility regarding the suitability of the information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

The information contained in this Safety Data Sheet relates only to specific materials designated and may not be valid for such material used in combination with any other material or in any process.

The product is supplied on the condition that the user accepts the responsibility to satisfy himself/herself as to the suitability and completeness of such information for himself / herself own particular use.

The customer should provide this Safety Data Sheet to any person involved in the usage of this materials.

Prepared by : Chang Lih Heng  
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