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
Website	:	www.eqwelding.com
Product Type	:	Stainless Steel MIG Wire / TIG Rod
Trade Name	:	EQ307/Si, EQ308/H/L/LSi, EQ309/L/LSi/LMo, EQ310, EQ312, EQ316/H/L/LSi, 317L, 318/Si, 320/LR, 330, 347/Si, 385/904L, 409/Nb, 410, 420, 430/LNb, 439Ti, 630, 2209, 2594,
Classification	:	AWS A5.9 ER307/Si, ER308/H/L/LSi, ER309/L/LSi/LMo, ER310, ER312, ER316/H/L/LSi, 317L, 318/Si, 320/LR, 330, 347/Si, 385/904L, 409/Nb, 410, 420, 430/LNb, 439Ti, 630, 2209, 2594,

SECTION II : COMPOSITION AND INGREDIENTS

IMPORTANT: This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered by Section V; see it for industrial hygiene information. CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.

(1) The term "hazardous" in "Hazardous Materials" should be interpreted as a term required and defined in the Hazards Communication Standard and does not necessarily imply the existence of any hazard. All materials are listed on the TSCA inventory.

		Exposure Limit	
Ingredient	**CAS No.**	**TLV**	**PEL**
1. Iron	7439-89-6	5	10 (as FeO3)
2. Chromium (4)	7440-47-3	0.05 (chromium VI)	0.05 (chromium VI)
3. Nickel (4)	7440-02-0	1	1
4. Manganese (4)	7439-96-5	5	5 ceiling
5. Silicon	7440-21-3	5 (as SiO2)	5 (as SiO2)
6. Molybdenum (A)	7439-98-7	15	10
7. Columbium (B)	7440-03-1	-	-

1. Occupation Safety and Health Administration, 29, C.F.R. 1910. 1000 Permissible Exposure Limit (PEL).
2. American Conference of Governmental Industrial Hygenist (ACGIH) Threshold Limit Value (TLV[R]).
3. Not known; nuisance particulate concentration per ACGIH is 10mg/m3. (Nuisance)
4. These ingredients are covered under the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of CFR 372.

(A) Present in 309LMo, 316/H/L/LSi, 317L, 318, 320/LR, 385/904L, 630
(B) Present in 347/Si, 318, 320/LR, 630, 409Nb

SECTION III : HAZARD IDENTIFICATION

The fumes and gases produced during welding with the normal use of this product are covered by Section 11; see it for industrial hygiene information.

Emergency overview:

Product is inert, no special hazardous, handling or spill procedures are required.

Physical stage:

Solid, product is packed in wire form. Stable, not self-vaporizing nor self-dissolving.

Color:

Copper brownish for EQ70S and steel gray for EQ70S-Z.

Potential acute health effects:

No known to have any acute health effect.

Flammable:

Not flammable at all.

Threshold Limit Value:

The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5 mg/M3. The ACGIH 1984-85 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section 5 for specific fume constituents, which may modify this TLV.

Effects of Overexposure:

FUMES AND GASES can be dangerous to your health. Aggravation of pre-existing respiratory or allergic conditions may occur in some workers.

SHORT-TERM (ACUTE) OVEREXPOSURE to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes.

LONG-TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in the lung) and is believed by investigators to affect pulmonary function.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can kill.

SECTION IV : FIRST AIDS MEASURES

SKIN: If the product's fumes irritate the skin, begin decontamination with running water. Minimum flushing is for 15 minutes.

EYES: If the product's fumes irritate the eyes, flush eyes under gently running water. Minimum flushing is for 15 minutes.

INHALATION: Move victim to fresh air. If necessary, use artificial respiration.

VICTIMS OF CHEMICAL EXPOSURE MUST BE TAKEN FOR MEDICAL ATTENTION, ESPECIALLY IF ADVERSE EFFECTS AONTINUE FAFTER FIRST-AID TREAMENT.

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.

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.

SECTION IX : PHYSICAL AND CHEMICAL PROPERTIES

These products shipped are non-hazardous, non-flammable, non-explosive and non-reactive.

SECTION X : STABILITY AND REACTIVITY

Hazardous Decomposition Products:

Welding fumes cannot be classified simply. Their composition and quantity are dependent upon the metal being welded, the process, procedures and electrodes used. Other conditions which also influences the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (such as paint, plating or galvanizing), number of welds and volume of work area, quality and amount ventilation, position of welder's head with respect to the fume plume, as well as the presence of contaminations in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities). The primary route of entry of welding fumes and gases is by inhalation.

When the electrode is consumed, the fume and gas decomposition produces are different in percent and form from the ingredients listed in Section 2. Decomposition products include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 2 plus those from base metal, coating etc., as noted above. These components are virtually always present as complex compounds and not as metals (Characterization of Arc Welding Fume: American Welding Society).

Reasonably expected fume constituents from these products would include: complex oxides of iron, chromium, nickel, manganese and silicon. Products containing molybdenum or columbium will also have complex oxides of these elements in their fumes. Cr III fume limits (0.5 mg/M3) may be reached before general fume limit of 5 mg/M3 is reached. Monitor fumes for Cr III level. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet, if worn, or in the worker's breathing zone. See ANSI/AWS F1.1, available from the American Welding Society, P.O. Box 350104, Miami, FL, 33135.

SECTION XI : TOXICOLOGICAL INFORMATION

The product itself is not toxic. The only concern is workers' exposure to the welding fume during welding. In most of the cases, it is OSHA's mandatory requirement to have welding fume to be extracted out from welding zone and welders' breathing zone.

Hence, some toxicological information of potential hazardous elements and their poisoning symptoms are summarized in table below.

No	Ingredients	CAS No.	OSHA PEL (mg/m3)	Poisoning symptom
1	Carbon Monoxide (CO)	630-08-0	55.0	Headache, nausea, vomiting, dizziness, unconsciousness or even death
2	Carbon Dioxide (CO2)	124-38-9	9000.0	Headache, flushed skin, irregular heatbeat, dizziness and unconsciousness or even death
3	Nitrous oxide (Nox)	10024-97-2	55.0	Drowsiness, diziness, ephoria and unconsciousness
4	Manganese Fume (Mn)	7439-96-5	5.0	Sleepiness, weakness in legs, uncontrolled laughter or pneumonia for prolonged exposure.
5	Copper fume (Cu)	1317-38-0	0.1	upper respiratory tract irritation& nausea. No ill effects resulted from exposures to copper fumes at concentrations up to 0.4 mg/m3
6	Sulphur dioxide (S)	7446-09-0	5.0	Pungent odor, irritation to eye, noze & throat, cough, chest pain, cyanosis

SECTION XII : ECOLOGICAL INFORMATION

No specific adverse effect known so far.

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

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

No specific regulatory information is further needed.

SECTION XVI : OTHER INFORMATION

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 Herng
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