Material Safety Data Sheet

Date : 2022. 09. 21

Rev. No. : 1

1. Identification of the substance or mixture and of the supplier

1.1. Product identifier: Stainless Steel Welding Rod

1.2. Trade Name

KWT(M)-308	**KWT(M)-308L**	**KWT(M)-308LSi**	**KWT(M)-309**	**KWT(M)-309L**
KWT(M)-309LSi	**KWT(M)-310**	**KWT(M)-312**	**KWT(M)-316**	**KWT(M)-316L**
KWT(M)-316LSi	**KWT(M)-317L**	**KWT(M)-320**	**KWT(M)-347**	**KWT(M)-410**
KWT(M)-430	**KWT(M)-2209**	**KWT(M)-430LNb**		

1.3. Recommended use and restrictions on use

- Recommended use: Stainless Steel Welding Materials.

- Restrictions on use: Other than recommended use

1.4. Supplier's details and Emergency contact number

KOWEL CO.,LTD

5, Sanmakgongdanbuk 4-gil, Yangsan-si, Gyeongsangnam-do, Republic of Korea (50567)

Tel. +82-55-383-1801 / Quality Management Division

2. Hazards identification

2.1. Classification of the mixture

1) Classification in accordance with Directive 1999/45/EC

Carc. Cat. 3; R40, T; R48/23, R43.

2) Classification in accordance with Regulation (EC) No 1272/2008

Carc. 2, H351, STOT RE 1, H372, Skin Sens. 1, H317.

3) Additional information

For full text of R-phrases and Hazard and EU Hazard statements: see SECTION 16.

2.2. Label elements (according to Regulation (EC) No 1272/2008)

1) Pictograms

2) Signal word: Danger

3) Hazard statements

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long-lasting effects

4) Precautionary statements

P201 Obtain special instructions before use.

P260 Do not breathe fume.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 If exposed or concerned: Get medical advice/ attention

P363 Wash contaminated clothing before reuse.

P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician.

P405 Store locked up.

P501 Dispose of contents and container in accordance with local and national regulations.

※ The mixture does not require a label according to Annex I.

Annex I, section 1.3 Derogations from labelling requirements for special cases:
In accordance with Article 23 the following derogation shall apply:
Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex, if they do not present a hazard to human health by inhalation ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex. On the other hand, we want to offer classification and label of welding fume for workers.

2.3. Other hazards: No data available.

3. Composition / Information on ingredients

CAS. No. / Product Name	C	Cr	Ni	Mo	Mn	Si	P	S	N	Cu	Fe	Spec.
	7440-44-0	7440-47-3	7440-02-0	7439-98-7	7439-96-5	7440-21-3	7723-14-0	7704-34-9	7727-37-9	7440-50-8	7439-89-6	
KWT(M)-308	< 0.08	19.5-22.0	9.0-11.0	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER308
KWT(M)-308L	< 0.03	19.5-22.0	9.0-11.0	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER308L
KWT(M)-308LSi	< 0.03	19.5-22.0	9.0-11.0	< 0.75	1.0-2.5	0.65-1.0	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER308LSi
KWT(M)-309	< 0.12	23.0-25.0	12.0-14.0	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER309
KWT(M)-309L	< 0.03	23.0-25.0	12.0-14.0	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER309L
KWT(M)-309LSi	< 0.03	23.0-25.0	12.0-14.0	< 0.75	1.0-2.5	0.65-1.0	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER309LSi
KWT(M)-310	0.08-0.15	25-28.0	20.0-22.5	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER310
KWT(M)-312	< 0.15	28.0-32.0	8.0-10.5	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER312
KWT(M)-316	< 0.08	18.0-20.0	11.0-14.0	2.0-3.0	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER316
KWT(M)-316L	< 0.03	18.0-20.0	11.0-14.0	2.0-3.0	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER316L
KWT(M)-316LSi	< 0.03	18.0-20.0	11.0-14.0	2.0-3.0	1.0-2.5	0.3-0.65	< 0.03	< 0.03	0.1-0.2	< 0.75	Rem	AWS A 5.9 ER316LSi
KWT(M)-317L	< 0.03	18.5-20.5	13.0-15.0	3.0-4.0	1.0-2.5	0.65-1.0	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER317L
KWT(M)-320LR	< 0.025	19.0-21.0	32.0-36.0	2.0-3.0	1.5-2.0	0.3-0.65	< 0.015	< 0.02	-	3.0-4.0	Rem	AWS A 5.9 ER320LR
KWT(M)-347	< 0.08	19.0-21.5	9.0-11.0	< 0.75	1.0-2.5	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER347
KWT(M)-410	< 0.12	11.5-13.5	< 0.6	< 0.75	< 0.6	0.65-1.0	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER410
KWT(M)-430	< 0.10	15.5-17.0	< 0.6	< 0.75	< 0.6	0.3-0.65	< 0.03	< 0.03	-	< 0.75	Rem	AWS A 5.9 ER430
KWT(M)-2209	< 0.03	21.5-23.5	7.5-9.5	2.5-3.5	0.5-2.0	0.3-0.65	< 0.03	< 0.03	0.08-0.2	< 0.75	Rem	AWS A 5.9 ER2209

CAS. No. / Product Name	C	Cr	Ni	Mo	Mn	Si	P	S	N	Cu	Nb	Fe
	7440-44-0	7440-47-3	7440-02-0	7439-98-7	7439-96-5	7440-21-3	7723-14-0	7704-34-9	7727-37-9	7440-50-8	7440-03-1	7439-89-6
KWT(M)-430LNb	< 0.02	17.5-19	< 0.5	< 0.75	0.4-0.6	0.35-0.55	< 0.03	< 0.03	< 0.02	< 0.05	0.05+7(C+N) – 0.55	Rem

Substance name	CAS/EC No.	Classification			
		67/548/EEC	CLP		
			Hazard Class and Category Code	Hazard Statement	Pictogram/ Signal word
*1 Nickel [particle diameter < 1 mm]	7440-02-0 / 231-111-4	Harmful Carc. Cat. 3; R40 Toxic T; R48/23 Irritant R43 Dangerous for The environment R52-53	Carcinogenicity Carc. 2 Specific target organ toxicity repeated Exposure STOT RE 1 Skin sensitization Skin Sens. 1 Hazardous to the aquatic environment Aquatic Chronic 3	H351 H372 H317 H412	GHS08 GHS07 Danger

*1: Substance is classified in terms of Regulation (EC) No. 1272/2008 Annex VI.

* For full text of H-statements and R-phrases: see SECTION 16.

4. First-aid measures

4.1. Description of necessary measures

In case of respiratory exposure: Remove to fresh air and keep at rest. If breathing is difficult or has stopped, administer artificial respiration as necessary. Seek medical attention.

In case of skin contamination: Wash contaminated area thoroughly with soap and water. Remove and wash contaminated clothing. If a persistent rash or irritation occurs, seek medical attention. In case of intrusion into eye: Immediately flush eyes with large amounts of running water for at least 15 minutes, lifting the upper and lower eyelids. Get medical attention.

I**n case of oral intake:** Ingestion is considered unlikely due to product form. However, if swallowed: rinse mouth. Do not induce vomiting. Seek medical attention. Advice to doctor: treat symptomatically

4.2. Most important symptoms / effects. Acute and delayed

The mixture is suspected of causing cancer. May cause an allergic skin reaction. Cause damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

5. Fire-fighting measures

5.1 Suitable extinguishing media

Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide).

5.2. Special hazards arising from the substance or mixture

Fire may produce irritating or poisonous gases.

5.3. Special protective equipment and precautions for fire-fighters

In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

6.2. Environmental precautions

Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

6.3. Methods and material for containment and cleaning up

Collect the material in labeled containers and dispose of according to local and regional authority requirements

7. Handling and storage

7.1. Precautions for safe handling

Welding may produce fumes, gases and dust hazardous to health. Avoid breathing these fumes, gases and dust. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in in Section 8.

7.2. Conditions for safe storage, including any incompatibilities

Store in cool, dry and well-ventilated place. Keep away from incompatible materials. Keep away from heat and open flame.

8. Exposure controls / Personal protection

8.1. Control parameters

Community workplace exposure limits were established for substances contained in the mixture. Occupational exposure limit values for chromium are listed in Commission Directive 2006/15/EC

Ingredients	CAS No.	ACGIH TLV (mg/m3)	OSH PEL (mg/m3)
Iron oxide (Iron)	1309-37-1 (7439-89-6)	(Resp.) 5	(Fume) 10
Chromium (Cr)	7440-47-3	(Metal) 0.5	(Metal) 1
Manganese (Mn)	7439-96-5	(C-Resp.) 0.02 (C-Inhal.) 0.1	(C) 5 (Fume) 5
Silicon (Si)	7440-21-3	-	(Dust) 10 (Resp) 5
Copper (Cu)	7440-50-8	(Fume) 0.2 (Dust/Mist) 1	(Fume) 0.1 (Dust/Mist) 1
Nickel (Ni)	7440-02-0	(Inhal.) 1.5	1
Molybdenum (Mo)	7439-98-7	(SC-Resp.) 0.5 (Metal, ISC -Inhal.) 10 (Metal-Resp.) 3	(SC) 5 (ISC-dust) 15

Other elements or ingredients may be present but in quantities much less than 1%.
Resp: Respirable fraction / Inhal: Inhalable fraction
C: Compound
SC: Soluble compound
ISC: Insoluble compoud

8.2. Appropriate engineering controls

Use local exhaust ventilation during all welding operations.

8.3. Individual protection measures, such as personal protective equipment

Always wear eye protection during welding operations, helmet and/or face shield with filter lens.
Wear appropriate protective (welding) gloves during welding.
Wear appropriate protective clothing and boots.
If ventilation is insufficient, use appropriate respirator or self-contained breathing apparatus.

9. Physical and chemical properties

9.1. Physical state: Solid wire
9.2. Colour: -
9.3. Odour: -

9.4. Melting point / Freezing point: -
9.5. Boiling point and boiling range: -
9.6. Flammability: -
9.7. Upper/Lower explosion and flammability limit: -
9.8. Flash point: -
9.9. Auto-ignition temperature: -
9.10. Decomposition temperature: -
9.11. PH: -
9.12. Kinematic viscosity: -
9.13. Solubility: -
9.14. Partition coefficient: n-octanol/water: -
9.15. Vapour pressure: -
9.16. Density / Relative density: -
9.17. Relative vapour density: -
9.18. Particle characteristics: -

10. Stability and reactivity

10.1. Reactivity: No data available
10.2. Chemical stability: The product is stable under normal conditions
10.3. Possibility of hazardous reactions: No data available.
10.4. Conditions to avoid: No data available.
10.5. Incompatible materials: No data available.
10.6. Hazardous decomposition products
Metal oxide fumes and gases are produced during welding.

11. Toxicological information

11.1. Information on the likely routes of exposure
The mixture may cause an allergic skin reaction. It is suspected of causing cancer. It causes damage to organs through prolonged or repeated exposure.

12. Ecological information

12.1. Ecotoxicity: No data available
12.2. Persistence and degradability: No data available
12.3. Bioaccumulative potential: No data available
12.4. Mobility in soil: No data available
12.5. Results of PBT and vPvB assessment: No data available
12.6. Other adverse effects: No data available

13. Disposal considerations

13.1. Waste treatment methods: Dispose off in accordance with local and national regulations.

14. Transport information

14.1 UN number: No data available
14.2. UN proper shipping name: No data available
14.3. Transport hazard class: No data available
14.4. Packing group, if applicable: No data available
14.5. Environmental hazards: No data available
14.6. Transport in bulk according to IMO instruments: No data available
14.7. Special precautions which a user: No data available

15. Regulatory information

15.1. Annex XVII to Regulation (EC) No 1907/2006 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

[Nickel CAS No 7440-02-0 EC No 231-111-4 and its compounds]
1) Shall not be used:
(a) in any post assemblies which are inserted into pierced ears and other pierced parts of the human body unless the rate of nickel release from such post assemblies is less than 0,2

μg/cm2/week (migration limit)

(b) in articles intended to come into direct and prolonged contact with the skin such as :
- earrings,
- necklaces, bracelets and chains, anklets, finger rings,
- wrist-watch cases, watch straps and tighteners,
- rivet buttons, tighteners, rivets, zippers and metal marks, when these are used in garments, if the rate of nickel release from the parts of these articles coming into direct and prolonged contact with the skin is greater than 0,5 μg/cm2/week.

(c) in articles referred to in point (b) where these have a non-nickel coating unless such coating is sufficient to ensure that the rate of nickel release from those parts of such articles coming into direct and prolonged contact with the skin will not exceed 0,5 μg/cm2/week for a period of at least two years of normal use of the article.

2) Articles which are the subject of paragraph 1 shall not be placed on the market unless they conform to the requirements set out in that paragraph.

3) The standards adopted by the European Committee for Standardization (CEN) shall be used as the test methods for demonstrating the conformity of articles to paragraphs 1 and 2.

Other substances in the mixture are not subject to authorization under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

16. Other information

16.1. List of relevant risk phrases and hazard statements:

R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitization by skin contact.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

16.2. Instructions for the training: Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

16.3. Recommended restrictions on use (i.e. non-statutory recommendations by supplier):
Mixture should not be used for any other purpose than for which is appointed (point 1.2). Because of the fact that specific conditions of use of mixture are out of supplier's control, it is responsibility of the user to adjust the prescribed warnings to local laws and regulations. Safety information describes the product in terms of safety and it cannot be considered as technical information about product.

16.4. Sources of key data used to compile the Safety Data Sheet: SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.

16.5. Purpose of SDS: Purpose of this SDS is to provide relevant information for users of product to ensure proper handling and control of risks/hazards.