

SAFETY DATA SHEET

SDS # TW3002
Revised Date: JULY 2026
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name: ARC WELDING ELECTRODES 6013

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Type – Mild Steel Shielded Metal Arc Welding Electrode

Classifications: AWS A 5.1

1.3. Details of the supplier of the safety data sheet

Company :

TECHNIWELD USA
6205 BOAT ROCK BLVD
ATLANTA, GA 30336
Tel: 404-699-9900 Fax: 404-699-7800
Email: sales@twusa.com

1.4. Emergency telephone number

800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Description

The product is not classified as hazardous according to applicable GHS hazard classification criteria.

2.2. Label elements

Labeling according to Regulation (US HCS) 29 CFR 1910.1200

Signal word Danger

Hazard statements

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H372	Causes damage to respiratory system, eyes, brain and nervous system through prolonged or repeated exposure.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash skin and hair thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

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P281	Use personal protective equipment as required.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	IF skin irritation or rash occurs: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

2.3 Other hazards

This product is not considered hazardous as provided. Gloves should be worn when handling to prevent contaminating hands with product dust. Avoid inhalation of dust and eye contact with this product. When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock. Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure, and electrodes used.

See ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes" and "Characterization of Arc Welding Fume" available from the American Welding Society, 8669 NW 36 #130, Miami, FL 33166.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1%.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not relevant (mixture)

3.2. Mixtures

Chemical Identity	CAS #	Range %	Classification	H-phrases M factor acute M factor chronic	Note
Calcium Carbonate	1317-65-3	1-11	-	-	-
Kaolin	1332-58-7	1-11	-	-	-
Feldspar	68476-25-5	1-10	-	-	-
Calcium Fluoride	7789-75-5	1-11	R36/37/38	H315 H319 H335	-
#Manganese	7439-96-5	1-10	R48	H373	-
Cellulose	9004-34-6	1-11	-	-	-
Titanium Dioxide	13463-67-7	5-25	Carc. Cat. 3 R40	H351	-
Potassium Silicate	1312-76-1	1-11	R36/38	H315 H319	-
Iron	7439-89-6	50-70	-	-	-
Silicon	7440-21-3	1-5	-	-	-
MICA	12001-26-2	1-11	-	-	-

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SECTION 4: First aid measures

Inhalation

If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.

Skin contact

For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water

Eye contact

For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.

4.2. Most important symptoms and effects, both acute and delayed

No data available

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

No data available

Other

Electric shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin CPR Call a physician immediately.

General: Move to fresh air and call for medical aid.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning material and fire situation.

5.2. Special hazards arising from the substance or mixture

Welding arcs and sparks can ignite combustible and flammable materials. Welding activity can produce oxides, manganese and manganese oxides, and iron oxides. See American National Standard Z49.1: Safety in Welding and Cutting published by the AWS.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus as fumes or vapors may be harmful.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted.

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6.2. Environmental precautions

Refer to Section 13.

6.3. Methods and material for containment and cleaning up

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse. Ensure collected materials are placed in appropriate containers, particularly if still hot.

6.4. Reference to other sections

Refer to section 8/13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handle with care. Wear gloves when handling welding rods. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, dry place in sealed containers. Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

7.3 Specific end use(s)

Arc Welding.

SECTION 8: Exposure controls/personal protection

Control parameters

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Ceiling expos-ure Limit ppm / mg/m ³	Source	Remark
CELLULOSE	9004-34-6 232-674-9	- 15	- -	OSHA	Total dust
SILICON	7440-21-3 692-536-2	- 5.0	- -	OSHA	respirable dust
TITANIUM OXIDE**	13463-67-7 236-675-5	- 10	- -	ACGIH	-
MANGANESE	7439-96-5 231-105-1	- 0.1	- -	ACGIH	for elemental and inorganic compounds
CALCIUM CARBONATE	1317-65-3 215-279-6	- 15	- -	OSHA	Total dust
KAOLIN	1332-58-7 310-194-1	- 2.0	- -	ACGIH	-
CELLULOSE	9004-34-6 232-674-9	- 5	- -	OSHA	Respirable Fraction
KAOLIN	1332-58-7 310-194-1	- 10	- -	OSHA	-

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TITANIUM OXIDE**	13463-67-7 236-675-5	- 15	- -	OSHA	Total dust
POTASSIUM SILICATE	1312-76-1 215-199-1	- -	- -	OSHA	-
MANGANESE	7439-96-5 231-105-1	- -	- 5	OSHA	as Mn
CELLULOSE	9004-34-6 232-674-9	- 10	- -	ACGIH	Total dust
MICA	12001-26-2 601-648-2	- 3	- -	OSHA	-
CALCIUM CARBONATE	1317-65-3 215-279-6	- 5	- -	OSHA	Respirable Fraction
FELDSPAR	68476-25-5 270-666-7	- 0.5	- 0.1	ACGIH	-
POTASSIUM SILICATE	1312-76-1 215-199-1	- -	- -	ACGIH	-
MICA	12001-26-2 601-648-2	- 3	- -	ACGIH	Respirable Fraction
SILICON	7440-21-3 692-536-2	- 3.0	- -	ACGIH	respirable dust

8.2. Exposure controls

Appropriate engineering controls

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust.

Hand protection

Abrasion (Cycles):(Type A-2 (500));(Type B-1 (100)); Cut (Factor):(Type A-1 (1.2));(Type B-1 (1.2));
Tear (Newton):(Type A-2 (25));(Type B-1 (10)); Puncture (Newton):(Type A-2 (60));(Type B-1 (20)); Burning
Behaviour:(Type A-3);(Type B-2); Contact Heat:(Type A-1);(Type B-1); Convective Heat:(Type A-2);(Type B--);
Small Splashes:(Type A-3);(Type B-2); Dexterity:(Type A-1 (11));(Type B-4 (6.5))

Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (oC) is 100 and the threshold time (seconds) >15.

Respiratory protection

Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

9.1. Information on basic physical and chemical properties

Physical state: Solid

Color: Grey, Off White, Brown, Blue, Green

Odour: Odourless

Odour Threshold: No data Available

pH Value: No data Available

Melting Point/Melting Range: >2372° F, >1300° C

Freezing Point: No data Available

Boiling Point/Boiling Range: No data Available

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Flash point: No data Available

Evaporation Rate: No data Available

Flammability: Product is not self igniting.

Lower and upper explosion limit : No data Available

Explosion limits: Product is not explosive

Vapour pressure: No data Available

Relative Vapour density: No data Available

Density and/or relative density: No data Available

Relative density: 6-9 g/cm³

Solubility: Insoluble in water.

Partition coefficient: No data Available

Auto-ignition temperature: No data Available

Decomposition temperature: No data Available

Kinematic viscosity: No data Available

Partition coefficient n-octanol/water: No data Available

Particle characteristics: No data Available

9.2. Other information: No data Available

SECTION 10: Stability and reactivity

10.1. Reactivity

Non Reactive unless gets in contact with chemical substances like acids or strong bases could cause generation of gas.

10.2. Chemical stability

This product is stable under normal conditions.

10.3. Possibility of hazardous reactions

No data Available

10.4. Conditions to avoid

This product is only intended for production of welding consumables.

10.5. Incompatible materials

No data available

10.6. Hazardous Decomposition Products:

When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal / Coated wire / Coated rod / Bare wire / Bare rod.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8. A significant amount of the chromium in the fumes can be hexa- valent chromium, which has a very low exposure limit in some countries. Manganese has a low exposure limit, in some countries, that may be easily exceeded.

Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone.

Air contaminants around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is

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difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as carcinogenic to humans (Group 1).

Acute toxicity

Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

No data available.

Respiratory or skin sensitisation

May cause sensitisation by skin contact

Germ cell mutagenicity

No data available.

Genotoxicity

No data available.

Carcinogenicity

Product / Substance name CAS / EC no.	Other
QUARTZ* 14808-60-7 / 238-878-4	*This product contains substance(s) that may cause cancer, which is/are classified as Carcinogenic to humans as per IARC.
TITANIUM OXIDE** 13463-67-7 / 236-675-5	**This product contains substance(s) that may cause cancer, which is/are classified as Possibly carcinogenic to humans as per IARC.

Repeated dose toxicity

No data available.

Reproductive toxicity

No data available.

STOT-single exposure

No data available.

STOT-repeated exposure

No data available.

Aspiration hazard

No data available.

11.2. Information on other hazards

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1 %.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

No data available.

Toxicity

No data available.

Aquatic

No data available.

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Soil

No data available.

Acute fish toxicity

No data available.

Acute algae toxicity

No data available.

Acute crustacean toxicity

No data available.

Chronical toxicity

No data available.

12.2. Persistence and degradability

No data available.s

Decay/transformation

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

The mixture does not contain substances in an individual concentration of $\geq 0,1\%$ which meet the criteria for vPvB and PBT according to Regulation (EC) No 1907/2006, Annex XIII (REACH).

12.6. Endocrine disrupting properties

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1%.

12.7. Other adverse effects

No data available

Other

Welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available.

USA RCRA: This product is not considered hazardous waste if discarded.

SECTION 14: Transport information

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

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14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation,

Authorisation and Restriction of Chemicals (REACH)

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL. of 19

November 2008. on waste and repealing certain Directives. European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

National regulations

No data available

Other regulations, limitations and legal regulations

Poland Regulations:

ACT of 25 February 2011 on the chemical substances and their mixtures (OJ # 63, poz. 322).

Regulation of the Minister of Family, Labour and Social Policy of 12th June 2018 on the Maximum Admissible Concentrations and Intensities of Harmful to Health Agents in the Working Environment (Dz. U. No 1286)

The Act on Waste of 14 December 2012, Journal of Laws of 2013, item 21 with amendments

Act of 13th June 2013 on packaging management and packaging waste (Journal of Laws of 2013, item 888).

Regulation of the Minister of the Environment of 9 December 2014 on waste catalogue (Journal of Laws of 2014, item 1923).

Regulation of the Minister of Economy of 21 December 2005. Concerning essential requirements for personal protective equipment (Journal. Laws No. 259, item. 2173).

Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to health in the working environment (the Journal of Laws 2011, no. 33, item 166).

USA Regulations :

USA: 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.)

CERCLA/SARA Title III Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs): Product is a solid solution in the form of a solid article. Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

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.

Manganese: 1.0% de minimis concentration

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International Inventories:

Australia: The substance(s) in this product is/are in compliance with the inventory requirements of Australia- Inventory of Industrial Chemicals (AIIC)

United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list under active substances

Canadian Environmental Protection Act (CEPA): All constituent(s) of this product is/are on the Domestic Substance List (DSL).

15.2. Chemical safety assessment

Not Available

Other

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.

SECTION 16: Other information

Changes to previous revision

This Safety Data Sheet has been revised due to modifications to Sections 1-16. Latest Revision of SDS as per Regulation and exposure limits – JULY 2026.

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.

Phrase meaning

Skin Sens. 1 - Skin sensitisation, hazard category 1 Carc. 2 -

Carcinogenicity, hazard category 2

STOT RE 1 - Specific Target Organ Toxicity — Repeated exposure, hazard category 1 Aquatic Chronic 3 -

Hazardous to the aquatic environment — Chronic hazard category 3

H228 – Flammable solid.

H315 – Causes skin irritation.

H317 – May cause an allergic skin reaction.

H319 – Causes serious eye irritation.

H335 – May cause respiratory irritation.

H351 – Suspected of causing lung cancer.

H372 – Causes damage to organs through prolonged or repeated exposure.

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

H400 – Very toxic to aquatic life

R-Phrases:

R11 - Highly flammable.

R36/38 – Irritating to eyes and skin.

R36/37/38 – Irritating to eyes, respiratory system and skin.

R40 – Limited evidence of a carcinogenic effect.

R43 – May cause sensitization by skin contact.

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

R48/23 – Toxic: danger of serious damage to health by prolonged exposure through inhalation.



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S-Phrases:

- S2** – Keep out of reach of children.
- S9** – Keep containers in a well-ventilated place.
- S15** – Keep away from heat.
- S16** – Keep away from source of ignition - No smoking.
- S26** – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S28** – After contact with skin, wash immediately with plenty of water.
- S36/37/39** – Wear suitable protective clothing, gloves and eye/face protection.
- S43** – In case of fire, use fire-fighting equipment on basis class D.

Other

Additional information

This product has been classified according to the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Techniweld USA requests the users of this product to study this Safety Data Sheet (SDS) and become aware of product hazards and safety information. To promote safe use of this product a user should: notify its employees, agents and contractors of the information on this SDS and any product hazards/safety information. Furnish this same information to each of its customers for the products.

Request such customers to notify employees and customers for the same product hazards and safety information.

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