

SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015 amending EC No. 1907/2006, CLP directive 1272/2008, also in accordance with ISO 11014-1 and ANSI Z400.1

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name AC GOUGING COPPERCLAD ELECTRODES

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

Not applicable

1.3. Details of the supplier of the safety data sheet

SDS created by TDS Team

Supplier ESAB DENTON

Street address 2800 Airport Road
Denton, TX 76207

Telephone 1-800-372-2123

Email sdsrequest@esab.com

Web site www.esab.com

1.4. Emergency telephone number

Emergency phone number 1-800-372-2123

Available outside office hours No

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The product is not classified

2.2. Label elements

The product do not require labeling

2.3. Other hazards

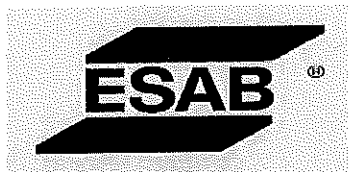
Skin contact is normally no hazard but should be avoided to prevent possible allergic reactions. Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock.

Fumes: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function.

Heat: Spatter and melting metal can cause burn injuries and start fires.

Radiation: Arc rays can severely damage eyes or skin.

Electricity: Electric shock can kill.



SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015 amending EC No. 1907/2006, CLP directive 1272/2008, also in accordance with ISO 11014-1 and ANSI Z400.1

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No.	Concentration	Classification	R-phrase H-phrase
Graphite	7782-42-5 231-955-3	59 - 70%	- -	- -
Copper	7440-50-8 231-159-6	18 - 30%	- -	- -
Cerium oxide	1306-38-3 215-150-4	6 - 8%	- -	- -
Carbon Black	1333-86-4 215-609-9	4 - 5%	- -	- -

SECTION 4: First aid measures

4.1. Description of first aid measures

No first aid measures should be required for the unused electrodes.

Skin contact Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

Eye contact Flush eyes with water as a precaution.

Ingestion DO NOT induce vomiting unless directed to do so by a physician or poison control center.

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

Get medical attention/advice if you feel unwell.

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

Not applicable

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media use dry chemical, CO₂, water spray or "alcohol" foam

5.2. Special hazards arising from the substance or mixture

Not applicable

5.3. Advice for firefighters

Not applicable

SAFETY DATA SHEET



*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

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.

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.

6.4. Reference to other sections

Refer to section 8/13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions No special technical protective measures required.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry place.

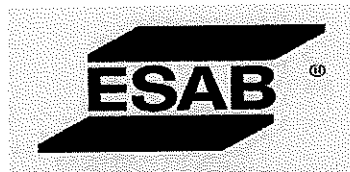
7.3. Specific end use(s)

Not applicable

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. The following limits can be used as guidance. Unless noted, all values are for 8 hour time weighted averages (TWA). For information about welding fume analysis refer to Section 10.



SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015 amending EC No. 1907/2006, CLP directive 1272/2008, also in accordance with ISO 11014-1 and ANSI Z400.1

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

National occupational exposure limits

Ingredient	CAS no. EC No.	Exposure limit mg/m ³ -ppm		Short-term exposure limit mg/m ³ -ppm		Remark	Source	Year
Graphite	7782-42-5 231-955-3	15	-	-	-	Total dust	OSHA	2017
Graphite	7782-42-5 231-955-3	5	-	-	-	Respirable fraction	OSHA	2017
Copper	7440-50-8 231-159-6	0,1	-	-	-	as Cu (Fume)	OSHA	2017
Copper	7440-50-8 231-159-6	1	-	-	-	as Cu (dust,mist)	OSHA	2017
Cerium oxide	1306-38-3 215-150-4	-	-	-	-	-	OSHA	2017
Carbon Black	1333-86-4 215-609-9	3,5	-	-	-	-	OSHA	2017

8.2. Exposure controls

Not applicable

Other

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust.
Train welders to avoid contact with live electrical parts and insulate conductive parts.

Ventilation Use respirator or air supplied respirator when welding or brazing in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. 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

- a) Appearance Colour: Copper brown
- b) Odour Not applicable
- c) Odour threshold Not applicable
- d) pH value Not applicable
- e) Melting point / freezing point Not applicable
- f) Initial boiling point and boiling range Not applicable
- g) Flash point Not applicable
- h) Evaporation rate Not applicable
- i) Flammability (solid, gas) Not applicable

SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015.
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

j) Upper / lower flammability or explosive limits	Not applicable
k) Vapour pressure	Not applicable
l) Vapour density	Not applicable
m) Relative density	Carbon 1.7g/cm ³ , Copper 8.9g/cm ³
n) Solubility	Not applicable
o) Partition coefficient: n-octanol / water	Not applicable
p) Auto-ignition temperature	Not applicable
q) Decomposition temperature	Not applicable
r) Viscosity	Not applicable
s) Explosive properties	Not applicable
t) Oxidising properties	Not applicable
Boiling point	Carbon 4027 degrees celsius, Copper 2927 degrees celsius, cerium oxide 3500 degrees celsius
Melting point	Carbon 3527 degrees celsius, Copper 1084 degrees celsius, Cerium Oxide 2400 degrees celsius
Appearance	Copper plating for surface of carbon rod
Physical state	Solid

9.2. Other information

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No hazards to be especially mentioned.

10.2. Chemical stability

Chemical stability Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Not applicable

10.4. Conditions to avoid

Not applicable

10.5. Incompatible materials

Not applicable



SAFETY DATA SHEET

*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

10.6. Hazardous decomposition products

Not applicable

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on toxicological effects	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 contamination and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).
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/skin sensitization	No data available
Germ cell mutagenicity	No data available
Genotoxicity	No data available
Carcinogenicity	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.)
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
LD50 Oral	No data available
LD50 Dermal	No data available
LC50 Inhalation	No data available
Routes of exposure	No data available
Symptoms related to the physical, chemical and toxicological characteristics	No data available
Mixture versus substance information	No data available
Delayed and immediate effects as well as chronic effects from short and long-term exposure	No data available
Interactive effects	No data available

SAFETY DATA SHEET

*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

Toxicity in case of skin contact No data available

Absence of specific data No data available

Toxicity in case of eye contact No data available

Mixtures No data available

Toxicity in case of ingestion No data available

Other

Acute effects No data available

Long term effect Chronic toxicity: Overexposure to welding fumes may affect pulmonary function.

Information to doctor No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity No data available

Toxicity No data available

Aquatic No data available

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

Persistence and degradability No data available

Decay/transformation No data available

12.3. Bioaccumulative potential

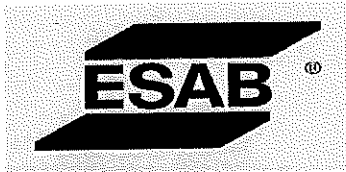
Bioaccumulative potential No data available

12.4. Mobility in soil

Mobility No data available

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No data available



SAFETY DATA SHEET

*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

12.6. Other adverse effects

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.
Residues from welding consumables and processes could degrade and accumulate in soils and groundwater.

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

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SAFETY DATA SHEET



*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

SECTION 15: Regulatory information

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

EU regulations

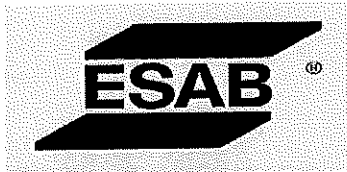
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 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.



SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of 830/2015 amending EC No. 1907/2006, CLP directive 1272/2008, also in accordance with ISO 11014-1 and ANSI Z400.1

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

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 Labour and Social Policy of 6 June 2014 on Maximum Permissible Concentration and Intensity of Agents Harmful to Health in the Working Environment (Dz. u. z. 2014, poz 817).

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 88).

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 313 Toxic Chemicals: The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.

Copper: 1.0% de minimis concentration

International Inventories:

Australia: The substance(s) in this product is/are in compliance with the inventory requirements of Australian Inventory of Chemical Substances (AICS)

United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

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

15.2. Chemical safety assessment

Chemical safety assessment No data 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.

Wear correct hand, head, eye and body protection.

SAFETY DATA SHEET

*This Safety Data Sheet complies with Annex II of 830/2015
amending EC No. 1907/2006, CLP directive 1272/2008,
also in accordance with ISO 11014-1 and ANSI Z400.1*

AC GOUGING COPPERCLAD ELECTRODES

Issued: 2018-01-14

Air Carbon-Arc Electrodes

SECTION 16: Other information

Changes to previous revision This Safety Data Sheet has been revised due to modifications to Sections 1-16.

References to key literature and data sources Refer to ESAB "Welding and Cutting - Risks and Measures", F52-529 "Precautions and Safe Practices for Air Electric Welding and Cutting" and F2035 "Precautions and Safe Practices for Gas Welding, Cutting and Heating" available from ESAB, and to: www.esab.com

Other

Additional information USA: Contact ESAB at www.esabna.com or 1-800 ESAB-123 if you have any questions about this SDS. American National Standard Z49.1 Safety in Welding and Cutting, ANSI/AWS F1.5 Methods for Sampling and Analyzing Gases from Welding and Allied Processes, ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", 550 North Le Jeune Road, Miami Florida 33135. Safety and Health Fact Sheets available from AWS at www.aws.org.

OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954

American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169

UK: WMA Publication 236 and 237, "Hazards from Welding fume", "The arc welder at work, some general aspects of health and safety".

Germany: Accident prevention regulation BGV D1, "Welding, cutting and related procedures"

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting, and Allied Processes".

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.

ESAB 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.

The information herein is given in good faith and based on technical data that ESAB believes to be reliable. Since the conditions of use is outside our control, we assume no liability in connection with any use of this information and no warranty expressed or implied is given. Contact ESAB for more information.

