Safety Data Sheet

30301

Acc. to OSHA HCS

Printing Date: 10/6/2017 *Reviewed on:* 10/6/2017

1 Identification

· **Product identifier**

· **Trade name:** AWS A5.1 Mild steel covered electrodes (E6011, E6013, E7014, E7018, E7018AC)

· **CAS Number:** -

· **EINECS Number:** -

· **Application of the substance / the mixture:** Shielded Metal Arc Welding Electrode

· **Details of the supplier of the safety data sheet.** **Manufacturer/Supplier:**

Forney Industries, Inc., 2057 Vermont Drive, Fort Collins, CO 80525

· **Forney SKUs:** 30301, 30305, 30401, 30405, 30410, 30505, 30510, 30680, 30681, 30684, 30685, 30686, 30689, 30690, 30701, 30705, 30801, 30805, 30810, 30905, 30910, 31101, 31105, 31201, 31205, 31210, 31305, 31310, 32001, 32005, 32101, 32105, 32110, 32205, 32210, 40102, 40202, 42447, 42448, 42449, 42451, 42452,42453, 42454, 42455, 42456, 42457, 42458, 42459, 42460, 42461, 42462, 42463, 42464, 42465, 42466, 42467, 42468, 42801, 45461, 45889

· **Contact Information:** 1-800-521-6038

· **Emergency telephone number:** 1-800-535-5053

2 Hazard(s) identification

Classification of the substance or mixture: The product is not classified according to the Globally Harmonized System (GHS).

Label elements -

· **GHS label elements:** Void

· **Signal word:** Void

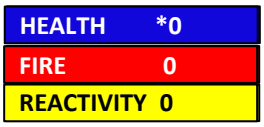
· **Hazard pictograms:** Void

· **Hazard statements:** Void

· **NFPA ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

· **HMIS (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **Other hazards. Results of PBT and vPvB assessment:**

· **PBT:** Not applicable. · **vPvB:** Not applicable.

3 Composition / information on ingredients

Chemical characterization: **Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

Product composition

Component		E6011	E6013	E7014	E7018, E7018 AC	
Iron		50 - 100%	50 - 100%	50 - 100%	50 - 100%	
Cellulose		12.5 - 25%	< 2.5%	< 2.5%		
Titanium dioxide			12.5 - 25%	5 - 12.5%	2.5 - 25%	
Manganese		2.5 - 5%	2.5 - 5%	< 2.5%	2.5% - 5%	
Aluminium oxide				< 2.5%		
Nickel						
Rutile		2.5 - 5%	5 - 15%	5 -15%		
Feldspar			2.5 - 5%			
Ilmenite		5 - 12.5%				
Kali-feldspar				2.5 - 5%		

Calcium fluoride					*0.1 - 12.5%*	
4-methylquinoline						
Silicon dioxide			*2.5 - 5%*	*5 - 12.5%*	*2.5 - 5%*	
Magnesium salt		*< 2.5%*				
Calcium carbonate			2.5 - 5%	2.5 - 5%	5 - 12.5%	
Treated alumina			< 2.5%			

Dangerous Components:

CAS	Component	EINECS	Acute Tox.
7439-89-6	*Iron*	*231-096-4*	*0*
9004-34-6	*Cellulose*	*232-674-9*	*0*
13463-67-7	*Titanium dioxide*	*236-675-5*	*0*
7439-96-5	*Manganese*	*231-105-1*	*4, H332*
7440-02-0	*Nickel*	*0*	*0*
1317-80-2	*Rutile*	*0*	*0*
12168-52-4	*Ilmenite*	*0*	*0*
1344-28-1	*Aluminium oxide*	*215-691-6*	*0*
7789-75-5	*Calcium fluoride*	*0*	*0*
491-35-0	*4-methylquinoline*	*0*	*3, H301*
14808-60-7	*Silicon dioxide*	*0*	*4, H332*

Nonhazardous Components

CAS	Component	EINECS	Acute Tox.
7757-69-9	*Magnesium salt*	*231-817-2*	*0*
0	*Feldspar*	*0*	*0*
85029-74-9	*Treated alumina*	*0*	*0*
68476-25-5	*Kali-feldspar*	*0*	*0*
1317-65-3	*Calcium carbonate*	*0*	*0*

4 First-aid measures

· ***Description of first aid measures***

· ***General information:*** *No special measures required.*

· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*

· ***After skin contact:*** *Generally the product does not irritate the skin.*

· ***After eye contact:*** *Rinse opened eye for several minutes under running water.*

· ***After swallowing:*** *Seek medical treatment.*

· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*

· ***Indication of any immediate medical attention and special treatment needed***

5 Fire-fighting measures

Extinguishing media

· ***Suitable extinguishing agents:*** *Suitable to surrounding conditions*

· ***Special hazards arising from the substance or mixture*** *No further relevant information available.*

· ***Advice for firefighters*** -

· ***Protective equipment:*** *No special measures required.*

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***

Ensure adequate ventilation. Use respiratory protective device against the effects of fumes/dust/aerosol.

· ***Environmental precautions:***

· **Methods and material for containment and cleaning up:** Do not allow to enter sewers/ surface or ground water.
· **Reference to other sections** Pick up mechanically.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Ensure that suitable extractors are available on processing machines
· **Information about protection against explosions and fires:** No special measures required.
· **Conditions for safe storage, including any incompatibilities** · **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

Control Parameters

Components with limit values that require monitoring at the workplace

Component	CAS	PEL	REL	TLV	EL	EV
Iron	7439-89-6	0	0	0	0	Long-term value: 1ϕ5η mg/m³
Cellulose	9004-34-6	Long-term value: 15*5**mg/m³	Long-term value: 15*5**mg/m³	Long-term value: 10 mg/m³	Long-term value: 10 mg/m³	Long-term value: 10 mg/m³ paper fiber, total dust
Titanium dioxide	13463-67-7	Long-term value: 15*mg/m³	See Pocket guide App. A.	Long-term value: (10) NIC-1** mg/m³ (** as NIC-A3)	Long-term value: 10 mg/m³ IARC 2B	Long-term value: 10 mg/m³ total dust
Manganese	7439-96-5	Ceiling limit value: 5mg/m³ as Mn	Short-term value: 3 mg/m³; Long-term value: 1	Long-term value: 0.02** 0.1ᵉ mg/m³ as Mn	Long-term value: 0.2mg/m³ as Mn; R	Long-term value: 0.2 mg/m³ as Mn
Aluminium oxide	1344-28-1	Long-term value: 15*5**mg/m³	Long-term value: 10*5**mg/m³	Long-term value: 1**mg/m³ as Al	Long-term value: 10 mg/m³	Long-term value: 10* mg/m³
Calcium fluoride	7789-75-5	Long-term value: 2.5 mg/m³ as F	Long-term value: 2.5 mg/m³ as F	Long-term value: 2.5 mg/m³ as F, BEI	Long-term value: 2.5 mg/m³ as F	0
Silicon dioxide	14808-60-7	see Quartz listing	Long-term value: 0.05˜ mg/m³	Long-term value: 0.025**mg/m³	0	0

PEL = Permisible Exposure Limit. REL = Recommended Exposure Limit. TLV = Threshold Limit Value.

Ingredients with biological limit values

Calcium fluoride	7789-75-5	2 mg/L Medium: urine; Time: prior to shift; Paremeter: Fluoride
		3 mg/L Medium: urine; Time: prior to shift; Paremeter: Fluoride (background, nonspecific)

** Respirable Fraction * total dust ˜ Respirable dust ᵉ inhalable fraction η welding fume ϕ

Additional information: The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

· **Breathing equipment:** Filter P2

· **Protection of hands:** Heat protection gloves (non-combustible)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.Selection of the glove material on consideration of the penetration times, rates of diffusion and the

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed

· **Eye protection:** Not required.

· **Body protection:** Protective work clothing.

Wear hand, head, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, and well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**		· **pH-value:**	Not applicable.
· **Form:**	Solid.	· **Flash point:**	Not applicable.
· **Odor:**	Odorless.	· **Flammability (solid, gaseous):**	Not determined.
· **Odour threshold:**	Not determined.	· **Decomposition temperature:**	Not determined.
· **Color:**	According to product specification.	· **Auto igniting:**	Product is not selfigniting.
		· **Danger of explosion:**	Product does not present an explosion hazard.

· **Explosion limits:**		· **Vapour density:**	Not applicable.
· **Lower:** .	Not determined	· **Evaporation rate:**	Not applicable.
· **Upper:**	Not determined.	· **Water:**	Insoluble.
· **Relative density:**	Not determined.		

· **Dynamic:**	Not applicable.	· **Partition coefficient (n-octanol/water):**	Not determined.
· **Kinematic:**	Not applicable.	· **Organic solvents:**	0.00%
· **Other information**	No further relevant information available.		

10 Stability and reactivity

· **Reactivity**

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions:** No dangerous reactions known.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:**

Reasonably expected fume constituents of this product would include: cupper oxide, copper oxide, chromoxide, nickel oxide.

Reasonably expected gaseous constituents would 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 from inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1 and ANSI/AWS F1.2-1992. In order to determine and evaluation of the existing problem areas, the standards EN ISO15011 –parts 1, 4 can also be applied.

11 Toxicological information

Information on toxicological effects

· **Acute toxicity:**
· **Primary irritant effect:**
· **On the skin:** No irritant effect. · **On the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations.
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic Categories

· IARC (International Agency for Research on Cancer)		
13463-67-7	Titanium dioxide	2B
14808-60-7	Silicon dioxide	1
7440-47-3	Chromium	3
7440-02-0	Nickel	1
1309-37-1	Iron trioxide	3
7789-75-5	Calcium fluoride	3
· NTP (National Toxicology Program)		
14808-60-7	Silicon dioxide	K
7440-02-0	Nickel	R

12 Ecological information

Toxicity
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water
Results of PBT and vPvB assessment:
· **PBT:** Not applicable. · **vPvB:** Not applicable.
· **Other adverse effects:** No further relevant information available.

13 Disposal considerations

Waste treatment methods
· **Recommendation:** Must be specially treated adhering to official regulations.
· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

UN-Number -	-
· Transport hazard class(es)	-
· ADR, IMDG, IATA	-
· Class	-
· Environmental hazards:	No
· Marine pollutant:	No
·Special precautions for user	Not applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
Transport/Additional information:	Not dangerous according to the above specifications
UN "Model Regulation":	-

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
1907/2006/EC, 1272/2008/EC Table 3.1, 67/648/EEC, EWC 2000/532/EC

Sara

Section 355 (extremely hazardous substances)		
7440-47-3	*Chromium*	
7723-14-0	*Phosphorus*	
Section 313 (Specific toxic chemical listings)		
7439-96-5	*Manganese*	
7440-50-8	*Copper*	
7440-47-3	*Chromium*	
7440-02-0	*Nickel*	
7440-62-2	*Vanadium*	
7723-14-0	*Phosphorus*	
7429-90-5	*Aluminium powder (pyrophoric)*	
TSCA (Toxic Substances Control Act)		
7439-89-6	*Iron*	
9004-34-6	*Cellulose*	
13463-67-7	*Titanium dioxide*	
7439-96-5	*Manganese*	
7440-02-0	*Nickel*	
1317-80-2	*Rutile*	
12168-52-4	*Ilmenite*	
1344-28-1	*Aluminium oxide*	
7789-75-5	*Calcium fluoride*	
491-35-0	*4-methylquinoline*	
14808-60-7	*Silicon dioxide*	
7757-69-9	*Magnesium salt*	
0	*Feldspar*	
85029-74-9	*Treated alumina*	
68476-25-5	*Kali-feldspar*	
1317-65-3	*Calcium carbonate*	
Proposition 65 · Chemicals known to cause cancer		
14808-60-7	*Silicon dioxide*	
7440-02-0	*Nickel*	
Chemicals known to cause reproductive toxicity for females:	*None of the listed ingredients*	
· Chemicals known to cause reproductive toxicity for males:	*None of the listed ingredients*	
· Chemicals known to cause developmental toxicity	*None of the listed ingredients*	
· Cancerogenity categories		
· EPA (Environmental Protection Agency)		
7439-96-5	*Manganese*	*D*
7440-50-8	*Copper*	*D*
7440-47-3	*Chromium*	*D*
7723-14-0	*Phosphorus*	*D*
· TLV (Threshold Limit Value established by ACGIH)		
13463-67-7	*Titanium dioxide*	*A4*
14808-60-7	*Silicon dioxide*	*A2*
7440-47-3	*Chromium*	*A4*
7439-98-7	*Molybdenum*	*A3*
7440-02-0	*Nickel*	*A5*
7429-90-5	*Aluminium powder (pyrophoric)*	*A4*
1309-37-1	*Iron trioxide*	*A4*
7789-75-5	*Calcium fluoride*	*A4*

1344-28-1	*Aluminium oxide*	*A4*
1332-58-7	*Kaolin*	*A4*
1309-48-4	*Magnesium oxide*	*A4*
25658-42-8	*Zirconium nitride*	*A4*
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
14808-60-7	*Silicon dioxide*	
13463-67-7	*Titanium dioxide*	
7440-02-0	*Nickel*	
OSHA (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

GHS label elements: *Void*

· ***Hazard pictograms:*** *Void* · ***Hazard statements:*** *Void*

· ***Signal word:*** *Void* ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Date of preparation / last revision 10/6/2017

· ***Abbreviations and acronyms:***

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)

Acute Tox. 4: Acute toxicity, Hazard Category 4