



SDS Number: E309L-16 Stainless Steel

Electrodes

Revision Date: 6/12/2025

SAFETY DATA SHEET

This Safety Data Sheet (SDS) covers welding consumables and related products and complies with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Superfund Amendments and Reauthorization Act (SARA) of 1986. Refer to the OSHA standard for specific requirements. This SDS is available on our website at www.forneyind.com, through your sales representative, or by contacting customer service at 1-800-521-6038.

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION:

Manufacturer/Supplier: Forney Industries, Inc.
Address: 2057 Vermont Drive Fort Collins, CO 80525
Website: www.forneyind.com
Email: CustomerService@forneyind.com
Phone Number: +1 (800) 521-6038
USA Emergency Phone Number: +1 (800) 535-5053
International Emergency Phone Number: +1 (352) 323-3500
Trade Name: E309L-16 Stainless Steel Electrodes
AWS Specification: E309L-16
Recommended Use:
Restrictions on Use:
Forney ITEM#'s: **45206, 45208, 45210**

SECTION 2 – HAZARDS IDENTIFICATION:

2.1. Classification of the substance or mixture

Lact.;H362	May cause harm to breast-fed children.
Skin Irrit. 2;H315	Causes skin irritation.
Eye Dam. 1;H318	Causes serious eye damage.
Skin Sens. 1;H317	May cause an allergic skin reaction.
Carc. 2;H351	Suspected of causing cancer.
STOT RE 1;H372	Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (lungs lungs)

2.2. Label elements



Danger



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H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H351 Suspected of causing cancer.

H362 May cause harm to breast-fed children.

H372 Causes damage to organs through prolonged or repeated exposure.

[Prevention]

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, mist, vapors or spray.

P263 Avoid contact during pregnancy, while nursing.

P264 Wash 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, eye protection, and face protection.

[Response]

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+313 IF exposed or concerned: Get medical advice or attention.

P310 Immediately call a POISON CENTER, doctor or physician.

P314 Get Medical advice or attention if you feel unwell.

P321 Specific treatment (see information on this label).

P333+313 If skin irritation or a rash occurs: Get medical advice or attention.

P362 Take off contaminated clothing and wash before reuse.

[Storage]

P405 Store locked up.

[Disposal]

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

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS:

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Iron CAS Number: 0007439-89-6	25 - 50	Not Classified	—



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Chromium CAS Number: 0007440-47-3	10 - 25	Not Classified	---
Nickel CAS Number: 0007440-02-0	5 - 10	Carc. 2;H351 STOT RE 1;H372 Skin Sens. 1;H317 Aquatic Chronic 3;H412	---
Titanium dioxide CAS Number: 0013463-67-7	5 - 10	Not Classified	---
Calcium carbonate CAS Number: 0001317-65-3	1 - 5	Not Classified	---
Calcium carbonate CAS Number: 0000471-34-1	1 - 5	Not Classified	---
Crystalline Silica - Quartz (non respirable) CAS Number: 0014808-60-7	1 - 5	Not Classified	---
Potassium silicate CAS Number: 0001312-76-1	1 - 5	Skin Corr. 1B;H314 Eye Dam. 1;H318 STOT SE 3;H335	---
Manganese compounds (as Mn) CAS Number: 0007439-96-5	1 - 5	Not Classified	---
Calcined china clay CAS Number: 0092704-41-1	1 - 5	Not Classified	---
Calcium fluoride CAS Number: 0007789-75-5	1 - 5	Not Classified	---

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

*PBT/vPvB - PBT-substance or vPvB-substance.

The full texts of the phrases are shown in Section 16.

SECTION 4 – FIRST AID MEASURES:

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes

Immediately flush the eyes with large amounts of water for at least 15 minutes, alternately lifting the upper and lower eyelids. After 5 minutes, if appropriate, remove contact lenses and continue flushing the eyes for an additional 15 minutes. Call a physician at once.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion

Do not induce vomiting. Get medical attention.

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



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Overview

Inhalation: Inhalation of dust may cause respiratory irritation. Chromium and certain compounds of chromium have been reported to cause damage to the lungs, resulting in cumulative damage.

Ingestion: May cause gastric disturbances.

Skin: May cause sensitization on repeated contact. Dermatitis has been reported from repeated contact with chromium compounds.

Eyes: Contact may cause irritation.

Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (See Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure.

Treat symptomatically. Check section 2.2 (GHS Label Elements) for further details.

Eyes

Causes serious eye damage.

Skin

May cause an allergic skin reaction. Causes skin irritation.

SECTION 5 – FIRE-FIGHTING MEASURES:

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.

Unsuitable extinguishing media: Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

Do not breathe dust, fume, mist, vapors or spray.

Avoid contact during pregnancy, while nursing.

5.3. Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

ERG Guide No. ----

SECTION 6 – ACCIDENTAL RELEASE MEASURES:

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

6.3. Methods and material for containment and cleaning up

Sweep up or pick up.



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SECTION 7 – HANDLING AND STORAGE:

7.1. Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

Check section 2.2 (GHS Label Elements) for further details. - [Prevention]

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials: No available information

Check section 2.2 (GHS Label Elements) for further details. - [Storage]

7.3. Specific end use(s)

No available information

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION:

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000471-34-1	Calcium carbonate	OSHA	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)
		ACGIH	No Established Limit
		NIOSH	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)
0001312-76-1	Potassium silicate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
0001317-65-3	Calcium carbonate	OSHA	TWA 15 mg/m ³ (total) TWA 5 mg/m ³ (resp)
		ACGIH	TWA: 10 mg/m ³ Ceiling: 20 mg/m ³
		NIOSH	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)
0007439-89-6	Iron	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
0007439-96-5	Manganese compounds (as Mn)	OSHA	C 5 mg/m ³ *See specific listings for specific compounds.
		ACGIH	TWA: 0.2 mg/m ³
		NIOSH	TWA 1 mg/m ³ *See specific listings for specific compounds. STEL: 3 mg/m ³ *See specific listings for specific compounds.
0007440-02-0	Nickel	OSHA	TWA 1 mg/m ³ [*Note: The PEL does not apply to Nickel carbonyl.]
		ACGIH	Insoluble TWA: 0.05 mg/m ³ A1, 1, (I) Soluble TWA: 0.05 mg/m ³
		NIOSH	Ca TWA 0.015 mg/m ³ [*Note: The REL does not apply to Nickel carbonyl.]
0007440-47-3	Chromium	OSHA	TWA 1 mg/m ³ [*Note: The PEL also applies to insoluble chromium salts.]
		ACGIH	TWA: 0.5 mg/m ³ (III)
		NIOSH	TWA 0.5 mg/m ³
0007789-75-5	Calcium fluoride	OSHA	No Established Limit
		ACGIH	2.5 mg/m ³ (as F)
		NIOSH	No Established Limit
0013463-67-7	Titanium dioxide	OSHA	TWA 15 mg/m ³
		ACGIH	TWA: 10 mg/m ³
		NIOSH	Footnote ca
0014808-60-7	Crystalline Silica - Quartz (non respirable)	OSHA	PEL 50 µg/m ³
		ACGIH	TWA: 0.025 mg/m ³
		NIOSH	0.05 mg/m ³ TWA (respirable)
0092704-41-1	Calcined china clay	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit



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8.2. Exposure controls

Respiratory	If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.
Eyes	Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.
Skin	Avoid skin contact. Wear PVC or rubber gloves to keep skin contact to a minimum. Refer to the manufacturer's recommendations regarding the suitability of any gloves used.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse. Check section 2.2 (GHS Label Elements) for further details.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES:

9.1. Information on basic physical and chemical properties

Appearance	Gray/BufF aggregate or powder Solid
Odor	Odorless
Odor threshold	No available information
pH	No available information
Melting point / freezing point	1560 - 2000° F, 850 - 1100° C
Initial boiling point and boiling range	No available information
Flash Point	°F °C, Test method: (Open/Close cup)
Evaporation rate (Ether = 1)	No available information
Flammability (solid, gas)	No available information
Upper/lower flammability or explosive limits	Lower Explosive Limit: No available information Upper Explosive Limit: No available information
Vapor pressure (Pa)	No available information
Vapor Density	No available information
Relative Density	No available information
Solubility in Water	No available information
Partition coefficient n-octanol/water (Log Kow)	No available information
Auto-ignition temperature	No available information
Decomposition temperature	No available information
Viscosity (cSt)	No available information
VOC Content	
Oxidising properties	No available information
Explosive properties	No available information
Particle Characteristics	---



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9.2. Other information

No other relevant information.

SECTION 10 – STABILITY AND REACTIVITY:

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No available information

10.4. Conditions to avoid

Avoid high temperatures and contact with incompatible material

10.5. Incompatible materials

No available information

10.6. Hazardous decomposition products

No hazardous decomposition data available.

SECTION 11 – TOXICOLOGICAL INFORMATION:

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Iron - (7439-89-6)	98,600.00, Rat - Category: NA	No data available.	No data available.	> 250.00, Rat - Category: NA	No data available.
Chromium - (7440-47-3)	> 5,000.00, Rat - Category: 5	No data available.	No data available.	> 5.41, Rat - Category: NA	No data available.
Nickel - (7440-02-0)	> 9,000.00, Rat - Category: NA	No data available.	No data available.	No data available.	No data available.
Titanium dioxide - (13463-67-7)	> 25,000.00, Rat - Category: NA	No data available.	No data available.	6.82, Rat - Category: NA	No data available.
Calcium carbonate - (1317-65-3)	No data available.	No data available.	No data available.	No data available.	No data available.
Calcium carbonate - (471-34-1)	>2,000.00, Rat - Category: 5	>2,000.00, Rat - Category: 5	No data available.	No data available.	No data available.
Crystalline Silica - Quartz (non respirable) - (14808-60-7)	No data available.	100,00No data available	No data available.	No data available.	No data available.
Potassium silicate - (1312-76-1)	No data available.	No data available.	No data available.	No data available.	No data available.
Manganese compounds (as Mn) - (7439-96-5)	> 2,000.00, Rat - Category: 4	No data available.	No data available.	> 5.14, Rat - Category: NA	No data available.
Calcined china clay - (92704-41-1)	No data available.	No data available.	No data available.	No data available.	No data available.
Calcium fluoride - (7789-75-5)	4,250.00, Rat - Category: 5	No data available.	No data available.	No data available.	No data available.

Carcinogen Data



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CAS No.	Ingredient	Source	Value
0000471-34-1	Calcium carbonate	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
0001312-76-1	Potassium silicate	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
0001317-65-3	Calcium carbonate	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
0007439-89-6	Iron	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
0007439-96-5	Manganese compounds (as Mn)	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	A4
0007440-02-0	Nickel	OSHA	Regulated Carcinogen: Yes;
		NTP	Known: Yes; Suspected: Yes;
		IARC	Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;
		ACGIH	A5
0007440-47-3	Chromium	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;
		ACGIH	No Established Limit
0007789-75-5	Calcium fluoride	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
0013463-67-7	Titanium dioxide	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;
		ACGIH	A4
0014808-60-7	Crystalline Silica - Quartz (non respirable)	OSHA	Regulated Carcinogen: No;
		NTP	Known: Yes; Suspected: No;
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	A2
0092704-41-1	Calcined china clay	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	No Established Limit
Classification		Category	Hazard Description
Acute toxicity (oral)		---	Not Applicable
Acute toxicity (dermal)		---	Not Applicable
Acute toxicity (inhalation)		---	Not Applicable
Skin corrosion/irritation		2	Causes skin irritation.
Serious eye damage/irritation		1	Causes serious eye damage.



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Respiratory sensitization	---	Not Applicable
Skin sensitization	1	May cause an allergic skin reaction.
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	2	Suspected of causing cancer.
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	1	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

SECTION 12 – ECOLOGICAL INFORMATION:

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and GHS and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/L	48 hr EC50 crustacea, mg/L	ErC50 algae, mg/L
Iron - (7439-89-6)	No data available.	No data available.	No data available.
Chromium - (7440-47-3)	No data available.	14.10, Daphnia magna	No data available.
Nickel - (7440-02-0)	15.30, Oncorhynchus mykiss	0.28, Ceriodaphnia dubia	0.24, Ankistrodesmus falcatus
Titanium dioxide - (13463-67-7)	294.00, Oryzias latipes	501.00, Daphnia magna	101.00, Pseudokirchneriella subcapitata
Calcium carbonate - (1317-65-3)	No data available.	No data available.	No data available.
Calcium carbonate - (471-34-1)	101.00, Oncorhynchus mykiss	101.00, Daphnia magna	No data available.
Crystalline Silica - Quartz (non respirable) - (14808-60-7)	No data available.	No data available.	No data available.
Potassium silicate - (1312-76-1)	301.00, Lepomis macrochirus	500.00, Daphnia magna	No data available.
Manganese compounds (as Mn) - (7439-96-5)	> 3.60, Oncorhynchus mykiss	> 1.60, Daphnia magna	4.50, Desmodesmus subspicatus
Calcined china clay - (92704-41-1)	No data available.	No data available.	No data available.
Calcium fluoride - (7789-75-5)	324.00, Cyprinus carpio	3.30, Daphnia magna	43.00, Scenedesmus subspicatus

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

No available information

12.4. Mobility in soil

No available information

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No available information



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SECTION 13 – DISPOSAL CONSIDERATIONS:

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

SECTION 14 – TRANSPORT INFORMATION:

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Regulated	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable Sub Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable Sub Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards	Marine Pollutant: No;		
14.6. Special precautions for user	No available information		

SECTION 15 – REGULATORY INFORMATION:

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Chromium

Crystalline Silica - Quartz (non respirable)

Manganese compounds (as Mn)

Nickel

Proposition 65 - Carcinogens (>0.0%):

Chromium

Titanium Dioxide

Silicon Dioxide

Nickel



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Proposition 65 - Developmental Toxins (>0.0%):

Chromium

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

WARNING: This product can expose you to chemicals including Silicon Dioxide, Titanium Dioxide, Nickel, and Chromium which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION:

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

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