

SAFETY DATA SHEET
All-State Duzall Flux



Replaces SDS: 2014-05-01

Issued: 2016-06-28

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name All-State Duzall Flux

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

Use General Purpose Soft Soldering Flux

1.3 Details of the supplier of the safety data sheet

Supplier ESAB Welding & Cutting Products

Street address 801 Wilson Ave.
Hanover, PA 17331

Telephone 1-717-637-8911

Fax 1-717-630-3458

Email us.technical.fillermetals@esab.com

Web site www.esabna.com

1.4 Emergency telephone number

Emergency phone number 1-800-424-9300 (Chemtrec)

Available outside office hours Yes

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008, Annex VI

Classification Hazardous to the aquatic environment — Acute hazard category 1
Hazardous to the aquatic environment — Chronic hazard category 1
Skin corrosion, hazard category 1B
Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation
Acute toxicity, oral, hazard category 4

Hazard statements H290, H302, H314, H315, H319, H335, H410

2.2 Label elements

GHS labeling of the substance (in accordance with Regulation (EC) No 1272/2008, Annex VI)

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Pictogram



Signal word

Danger

Hazard statements

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precaution statements

P234 Keep only in original container.
P260 Do not breathe dust/fumes/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician/
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P402 Store in a dry place.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation

More information

Appearance: White to Pale Yellow
Physical State: Liquid
Odor: Slightly acidic

2.3 Other hazards

None

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical name	CAS No. EC No.	Concentration	Classification	R-phrase H-phrase
Zinc chloride	7646-85-7 231-592-0	50 - 70%	- -	- -
Ammonium chloride	12125-02-9 235-186-4	5 - 20%	- -	- -
Hydrochloric acid	7647-01-0 231-595-7	5 - 15%	- -	- -
Glycerin	56-81-5 200-289-5	<5%	- -	- -
Methanol	67-56-1 200-659-6	<5%	- -	- -

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

Consult a physician. Show this safety data sheet to the doctor in attendance. Move patient out of dangerous area.

Inhalation	Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If rash or burns develops, consult a physician. Material is corrosive. Wash contaminated clothing before reuse and discard shoes.
Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Blindness can result.
Ingestion	If swallowed, DO NOT induce vomiting. Immediately give large quantities of water to drink. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see Section 2.2) and/or in Section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5. FIRE-FIGHTING MEASURES

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5.1 Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas, zinc/zinc oxides. Dense smoke may be generated.

5.3 Advice for firefighters

Special protective equipment for fire-fighters Wear self contained breathing apparatus for fire fighting if necessary.

Other

No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable and closed containers for disposal.

6.4 Reference to other sections

For disposal see Section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Preventive handling precautions Wash thoroughly after handling to remove residue. Do not breathe fumes. Professionally wash contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Store flux at ambient conditions. Keep extremely dry. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure limits

ACGIH TLV, mg/m3

Zinc chloride, fume 1, 2 (STEL)
Ammonium chloride 10, 20 (STEL)
Hydrochloric acid 2.98 (Ceiling)
Glycerin Withdrawn
Methanol 262, 328 (STEL)

USA, OSHA PEL, mg/m3

National occupational exposure limits

Ingredient	CAS no.	EC No.	Exposure limit mg/m3-ppm		Short-term exposure limit mg/m3-ppm		Ceiling exposure limit mg/m3-ppm		Remark	Source	Year
Ammonium chloride, fume	12125-02-9	-	-	-	-	-	-	-	Exposure limit: None	-	2016
Glycerin, mist	56-81-5	-	5	-	-	-	-	-	Respirable fraction	-	2016
Glycerin, mist	56-81-5	-	15	-	-	-	-	-	Total dust	-	2016
Hydrochloric acid	7647-01-0	-	-	-	-	-	7	5	-	-	2016
Methanol	67-56-1	-	260	200	-	-	-	-	-	-	2016
Zinc chloride, fume	7646-85-7	-	1	-	-	-	-	-	-	-	2016

8.2 Exposure controls

Technical precaution measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Eye / face protection

Safety glasses with side-shields conforming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Safety gloves

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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Other skin protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Full Contact: Material: Suitable protective clothing. Rubber boots. Rubber gloves. Rubber apron.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance, colour

Pale yellow

Appearance, physical state

Liquid

Auto-ignition temperature

Not applicable

Decomposition temperature

Not applicable

Evaporation rate

<1

Explosive properties

Not applicable

Flammability (solid, gas)

Not applicable

Flash point

160° - 165° F

Initial boiling point and boiling range

~215°F @ 760 mm Hg

Melting point / freezing point

Not applicable

Odour

Slightly acidic

Odour treshold

Not applicable

Oxidising properties

Not applicable

Partition coefficient: n-octanol / water

Not applicable

pH value

<1

Relative density

1.59 H₂O = 1 @ 72° F

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Solubility	Appreciable
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Upper / lower flammability or explosive limits	None
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Vapour density	<1
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Vapour pressure	3.5
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Viscosity	Not applicable
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9.2 Other information

Percent volatiles by weight <20%

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Other decomposition products: No data available

In the event of fire, see Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	No data available
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Skin corrosion / irritation	No data available
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Serious eye damage / irritation	No data available
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Corrosive effects	Hydrochloric acid: Corrosive to eyes (rabbit)
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	Zinc chloride 350 mg/kg/Rat Ammonium chloride 1650 mg/kg/Rat Glycerin 12,600 mg/kg/Rat Methanol 143 mg/kg/Human
LD50 Dermal	Glycerin >10,000 mg/kg/Rabbit Methanol 17,100 mg/kg/Rabbit
LC50 Inhalation	Methanol 128.2 mg/kg/Rat
Routes of exposure	Primary Route of Exposure: No data available
Toxicity in case of inhalation	No data available
Toxicity in case of skin contact	No data available
Toxicity in case of eye contact	No data available
Toxicity in case of ingestion	No data available

Other

Methanol may be fatal or cause blindness if swallowed. Effects due to ingestion may include: headache, dizziness, drowsiness, metabolic acidosis, coma, seizures. Symptoms may be delayed. Damage of the: liver, kidney. Stomach - Irregularities - Based on Human Evidence

Zinc chloride and its aqueous solutions are corrosive to the eyes and skin. They cause conjunctivitis and corneal burns in the eye and produce chemical burns, particularly on areas where the skin is broken. Ingestion produces a corrosive action to the mouth, throat, and digestive tract which can include symptoms of stomach pain, nausea, vomiting, bloody diarrhea, swelling of the throat, blood in the urine, and shock. Inhalation irritates the nose and throat (onset may be delayed by several hours), and pneumonia. Fatalities have occurred by inhalation and ingestion.

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Hydrochloric acid is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation symptoms include cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx and bronchi, pneumonia, and pulmonary edema.

Glycerin: Prolonged or repeated exposure may cause nausea, headache, and vomiting. Kidney - Irregularities - Based on Human Evidence

Long term effect Effects of Chronic Exposure: No data available

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Glycerin: No data available

Aquatic	Zinc chloride: EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h Ammonium chloride: LC50 - Daphnia magna (Water flea) - 161 mg/l - 48 h Methanol: EC50 - Daphnia magna (Water flea) - > 10,000.00 mg/l - 48 h
Acute fish toxicity	Hydrochloric acid: LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h Zinc chloride: LC50 - Cyprinus carpio (Carp) - 0.4 - 2.2 mg/l - 96.0 h Ammonium chloride: LC50 - Cyprinus carpio (Carp) - 209.00 mg/l - 96 h Ammonium chloride: LC50 - Oncorhynchus mykiss (Rainbow trout) - 3.98 mg/l - 96 h Ammonium chloride: NOEC - Oncorhynchus mykiss (Rainbow trout) - 57 mg/l - 96 h Methanol: Mortality LC50 - Lepomis macrochirus (Bluegill) - 15,400.0 mg/l - 96 h Methanol: NOEC - Oryzias latipes - 7,900 mg/l - 200 h
Acute algae toxicity	Zinc chloride: Growth inhibition LOEC - Pseudokirchneriella subcapitata - 12.5 mg/l - 96 h Methanol: Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 22,000.0 mg/l - 96 h

12.2 Persistence and degradability

Methanol: Biodegradability: Aerobic - Exposure time 5 d - Result: 72% - rapidly biodegradable

Methanol: Biochemical oxygen demand (BOD) = 600 - 1,120 mg/g

Methanol: Chemical oxygen demand (COD) = 1,420 mg/g

Methanol: Theoretical oxygen demand (ThOD) = 1,500 mg/g

12.3 Bioaccumulative potential

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Zinc chloride: Pimephales promelas (fathead minnow) - 63 d

Zinc chloride: Bioconcentration factor (BCF): 21,000

Methanol: Cyprinus carpio (Carp) - 72 d at 20°C - 5 mg/l

Methanol: Bioconcentration factor (BCF): 1

12.4 Mobility in soil

Mobility No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Avoid release to the environment. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Methanol: At 19°C 83 - 91% - 72 h

Remarks: Hydrolyses on contact with water. Hydrolyses readily.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal considerations

Product: Hazardous waste

USA RCRA: This product or product residue is considered hazardous waste if discarded, RCRA ID characteristic toxic Hazardous Waste D002.

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number

1760

14.2 UN proper shipping name

Name Corrosive Liquid, N.O.S. (Zinc Chloride, Hydrochloric Acid)

14.3 Transport hazard class(es)

IMDG Class 8 - Corrosive material 49 CFR 173.136

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IMDG Marine Pollutant

Yes. Unless your shipments qualify for an exemption, you must mark the products with the marine pollutant mark and add the words "Marine Pollutant" to the product's basic description on your bill of lading.

14.4 Packing group

PG II

14.5 Environmental hazards

Marine pollutant

14.6 Special precautions for user

ERG Guide No. 154

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

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

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Other regulations, limitations and legal regulations

International Inventories:

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

Canada: Canadian Environmental Protection Act (CEPA): All constituents of this product are on the Domestic Substance List (DSL).

WHMIS classification: Class D; Division 2, Subdivision B - Class E

Europe: All raw materials used in this product are listed on EINECS Inventory.

Federal Regulations:

CERCLA/SARA Title III Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

Ammonium chloride: 5000 RQ (lb)

Hydrochloric acid: 5000 RQ (lb)

Methanol: 5000 RQ (lb)

Zinc chloride: 1000 RQ (lb)

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.

Section 311 Hazard Class - As shipped: Immediate In Use: Immediate delayed

EPCRA/SARA Title III Toxic Chemicals:

Hydrochloric acid: 1.0% de minimis concentration

Methanol: 1.0% de minimis concentration

Zinc chloride 1.0% de minimis concentration

California Proposition 65: 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.)

15.2 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 soldering and protect yourself and others.

WARNING: Soldering 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.

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

USA: Contact ESAB at www.esabna.com or 1-800 ESAB-123 if you have any questions about this SDS.

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Other

Additional information

HMIS:
Health 3, Flammability 0, Reactivity 0

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.
- 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 this product.
- request such customers to notify employees and customers for the same product hazards and safety information.

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