

Revision Date: 05/03/19

Revision: A

SAFETY DATA SHEET

1. **PRODUCT & COMPANY IDENTIFICATION:**

1.1 Product Identifiers:

Product (Trade) Name: Eltech 235 Part A
Brand: Adhetron
CAS: Proprietary

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

Identified uses: Silver filled conductive epoxy adhesive

1.3 Details of the supplier of the safety data sheet:

Supplier: Pulsar Chem. Industry and Trade Co. Inc..
Address: Gazi mah. Catalli sok. No:33 Ankara
Telephone: 00903122221166
Fax: 00903122229400
E-mail: pulsar@pulsar.com.tr

1.4 Emergency Telephone Number

UZEM 114

2. **HAZARD IDENTIFICATION:**

2.1 Classification of substance or mixture:

Classification according to regulation (EC) No 1272/2008 [CLP]

Skin Irritation	Category 2 (H315)
Skin Sensitization	Category 1 (H317)
Eye Irritation	Category 2 (H319)
Germ Cell Mutagenicity	Category 2 (H341)
Aquatic Toxicity, Chronic	Category 2 (H411)

2.2 Label Elements:



SIGNAL WORD:

WARNING

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic effects.
H411	Toxic to aquatic life with long-lasting effects.

Supplementary statement(s)

Not applicable.

Precautionary Statement(s)

Prevention:

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P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/protective clothing.
Response:	
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.
	If exposed or concerned: get medical advice/attention.
P308+P313	
Storage:	
P405	Store locked up.
Disposal:	
P501	Dispose of contents/containers in accordance with local, regional, national, and international regulations.

2.3 Other hazards:

This mixture does not contain any Substances of Very High Concern (SVHC) at the SDS print date.

3. COMPOSITION/INFORMATION on INGREDIENTS**3.1 Substances:**

See 'Composition on ingredients' in Section 3.2

3.2 Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	% (weight)	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
1. 7440-22-4 2. 231-131-3 3. Not available 4. Not available	65 – 75	Silver	Aquatic Hazard, Acute Category 1, Aquatic Hazard, Chronic Category 1; H400, H410
1. Proprietary 2. Proprietary 3. Proprietary 4. Proprietary	20 – 30	Epoxy resin	Skin Irritation Category 2, Skin Sensitization Category 1, Eye Irritation Category 2, Aquatic Toxicity, Chronic Category 2; H315, H317, H319, H411
1. Proprietary 2. Proprietary 3. Proprietary 4. Proprietary	5 – 10	Epoxy diluent	Skin Irritation Category 2, Skin Sensitization Category 1, Germ Cell Mutagenicity Category 2, Aquatic Toxicity, Chronic Category 2; H315, H317, H341, H411

4. FIRST AID MEASURES:**4.1 Description of first aid measures:**

General first aid measures:

- In case of accident or if you feel unwell, seek medical advice immediately.
- When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders:

-First Aid responders should pay attention to self-protection and use the recommended personal protective equipment (PPE) when the potential for exposure exists.

If inhaled:

- Remove to fresh air.
- Get medical attention if symptoms occur.

If skin contact occurs:

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- Wash with soap and water as a precaution.
- Seek medical attention in the event of irritation.

If this product comes into contact with the eyes:

- Wash out immediately with fresh running water.
- Seek medical attention if irritation persists.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
- Other measures are usually unnecessary.

If swallowed:

- REFER FOR MEDICAL ATTENTION WHERE POSSIBLE WITHOUT DELAY.
- For advice, contact a POISON CENTER or doctor/physician.
- Urgent hospital attention may be needed.

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

See Section 11.

4.3 Indication of any medical attention and special treatment needed:

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (Airway, Breathing, Circulation, Disability, Exposure), the ABCDEs of toxicology (Antidotes, Basics, Change absorption, change Distribution, change Elimination).

For poisons (where specific treatment regime is absent):

Basic treatment

-Not expect to require special treatment.

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary edema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 mL water (5 mL/kg is recommended) for dilution where patient is able to swallow, has strong gag reflex, and does not drool.

Advanced treatment

-Not expect to require advanced treatment.

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary edema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and Currance, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

5. FIRE FIGHTING MEASURES:

5.1 Extinguishing Media

Suitable extinguishing media:

Use water fog, alcohol foam, CO₂ or dry chemical extinguishing media.

5.2 Special hazards arising from the substance or mixture:

None known.

5.3 Advice for firefighters:

Material will not burn unless preheated. Firefighters should not enter confined space without full bunker gear (helmet with face shield, bunkercoats, gloves and rubber boots), including a positive pressure, NIOSH

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approved, self-contained breathing apparatus.

5.4 Further information:

Not available

6. ACCIDENTAL RELEASE MEASURES:

6.1 Personal precautions, protective equipment, and emergency procedures:

See section 8.

6.2 Environmental Precautions:

See section 12.

- Discharge to the environment must be avoided.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area by containment, oil barriers, etc.
- Collect and dispose of contaminated wash water.
- Advise local authorities if significant spillages cannot be contained.

Major spills

- Discharge to the environment must be avoided.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area by containment, oil barriers, etc.
- Collect and dispose of contaminated wash water.
- Advise local authorities if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleanup:

Minor spills

- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.
- Control personal contact with the substance by using protective equipment.

Major spills

- Clear area of personnel and move upwind.
- Alert firefighters and tell them location and nature of hazard.

6.4 Reference to other sections:

For personal protective equipment see section 8.

For environmental hazards see section 12.

For disposal see section 13.

7. HANDLING and STORAGE:

7.1 Precautions for safe handling:

Technical measures:

- See Engineering measures under Section 8.2.

Ventilation:

- Use with local exhaust ventilation.

Safe handling

- Avoid all personal contact, including inhalation.
- Do not swallow.
- Avoid contact with eyes.
- Avoid prolonged or repeated skin contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid spillages.

Fire and explosion protection

See section 5.

Other information

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- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Do not eat, drink, or smoke when using this product.
- Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including incompatibilities:

Suitable container

- Metal can or drum.
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

None known.

7.3 Specific end uses:

Including but not limited to printing operations. See section 1.2.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION:

8.1 Control Parameters:

Derived No Effect Level (DNEL)

Not available.

Predicted No Effect Level (PNEL)

Not available.

Occupational Exposure Limits (OEL)

RELEVANT INGREDIENT DATA

Source	Ingredient	Mat'l Name	TWA	STEL	Peak	Notes
OSHA	Silver	Silver	0.1 mg/m ³			As dust

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

8.2.2 Personal protection



Skin Protection

- See Hand Protection below.
- Avoid prolonged or repeated contact with skin.

Hand/Foot Protection

- Wear chemical protective gloves such as nitrile, latex, or polychloroprene.

Eye Protection

- Wear chemically resistant safety glasses.

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- Contaminated leather items such as shoes, belts, and watch-bands should be removed and destroyed.
- The selection of suitable gloves does not only depend on the material but also on further marks of quality which can vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the chemical resistance of the glove material cannot be calculated in advance and therefore has to be verified prior to use and application.
- The exact break-through time for substances has to be obtained from the manufacturer of the protective gloves and equipment and has to be observed when making the final choice.

Body Protection

See Other protection below.

Other Protection

- Overalls.
- PVC apron.
- Lab coat/Tyvek.
- Respiratory protections (i.e. organic vapor respirator).
- Wear safety footwear or safety gumboots such as rubber.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards EN 166, EN 340, EN 374, EN 13832, and EN 133.

Thermal Hazards

Not available.

8.2.3 Environmental exposure concerns

See section 12.

9. PHYSICAL AND CHEMICAL PROPERTIES:

9.1 Information on basic physical and chemical properties:

a) Appearance	Form: Paste
	Color: Silver
b) Odor:	Slight
c) Odor Threshold	Not determined
d) pH	Not determined
e) Melting/Freezing point	Not determined
f) Boiling Point	> 200°C (est.)
g) Flash Point:	Not determined
h) Evaporation Rate	Not determined
i) Flammability (solid, gas)	Not determined
j) Upper/Lower Flammability Limits	Upper: Not determined Lower: Not determined
k) Vapor Pressure @ 20°C	Not determined
l) Vapor Density	Not determined
m) Specific Gravity (water=1):	3.04 (calculated)
n) Solubility in Water	Negligible
o) Partition coefficient: n-octanol/water	Not determined
p) Auto-ignition Temperature	Not determined
q) Decomposition Temperature	Not determined
r) Viscosity (25°C)	135,000 – 280,000 cps
s) Explosive Properties	Not determined
t) Oxidizing Properties	Not determined
u) Volatiles (by % wt.)	Negligible
v) VOCs (g/L)	Negligible

9.2 Other safety information:

Not available.

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10. STABILITY AND REACTIVITY:

10.1 Reactivity: See section 7.2.

10.2 Chemical Stability:

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization is not expected to occur.

10.3 Possibility of hazardous reactions: See section 7.2.

10.4 Conditions to avoid: See section 7.2.

10.5 Incompatible materials: See section 7.2.

10.6 Hazardous decomposition products: See section 5.3.

11. TOXICOLOGICAL INFORMATION:

Acute Toxicity

No data available on product itself.

ATE, mix

LD50, oral = > 5,000 mg/kg

LD50, dermal = > 2,000 mg/kg

LC50, inhalation = > 5,000 mg/L

Ingestion

May be harmful if swallowed (based on components).

Inhalation

Not expected to be a significant source of adverse health effects or irritation from inhalation sources.

Skin Corrosion/Irritation

Causes skin irritation.

Serious Eye Damage/Irritation

Causes serious eye irritation.

Sensitization

May cause skin sensitization (based on components).

Specific Target Organ Toxicity – Single Exposure (STOT – SE)

No data available on product itself.

Specific Target Organ Toxicity – Repeated Exposure (STOT – RE)

No data available on product itself.

Carcinogenicity

No data available on product itself.

ACGIH Classification: Not classified.

IARC Classification: Not classified.

NTP Classification: Not classified.

OSHA Classification: Not classified.

Teratogenicity, Reproductive Toxicity, and Mutagenicity

No data available on product itself.

Aspiration Hazard

No data available on product itself.

12. ECOLOGICAL INFORMATION:

12.1 Toxicity:

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PRODUCT	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Silver	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Epoxy resin	LC50	96	Fish	1.3 mg/L	OECD 203
	EC50	48	Water flea	2.1 mg/L	OECD 202
	LC50	72	Algae	> 11 mg/L	
Epoxy diluent	LC50	96	Fish	131 mg/L	OECD 203
	LC50	96	Fish	1 – 10 mg/L	
	EC50	24	Daphnia	1 – 10 mg/L	OECD 202
	IC50	3	Microorganisms	> 100 mg/L	OECD 209

DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability:

Ingredient	Persistence: Water/Soil	Persistence: Air
None	No data available for all ingredients	No data available for all ingredients

12.3 Bioaccumulative potential:

Ingredient	Bioaccumulation
None	No data available for all ingredients

12.4 Mobility in soil:

Ingredient	Mobility
None	No data available for all ingredients

12.5 Results of PBT and vPvB assessment:

	P	B	T
Relevant available data	Not available	Not available	Not available
PBT criteria fulfilled?	Not available	Not available	Not available

12.6 Other information/effects:

No data available.

13. DISPOSAL RECOMMENDATIONS:

13.1 Waste treatment methods

Product/Packaging disposal

- Containers may still present a chemical hazard or danger when empty.
- Return to supplier for reuse/recycling if possible.

Otherwise:

- If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers to prevent re-use and bury at authorized landfill or destroy at authorized incinerator.

Legislation addressing waste disposal requirements may differ by country, state, territory and/or province. Each user must refer to laws operating in their area. In some areas certain wastes must be tracked and logged.

-DO NOT allow wash water from cleaning or process equipment to enter drains.

- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Recycle whenever possible or consult manufacturer for recycling options.
- Consult state land waste management authority for disposal.
- Bury residue in an authorized landfill.
- Incinerate residue in an authorized incinerator.

Waste treatment options

Not available.

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Sewage disposal options

Not available.

14. TRANSPORT INFORMATION:**Labels required**

None

14.1 UN number

None

14.2 UN proper shipping name

ADR: Not regulated for transport

IATA: Not regulated for transport

DGR: Not regulated for transport

IMDG: Not regulated for transport

ADN: Not regulated for transport

14.3 Transport hazardous class(es)

None

14.4 Packaging group

None

14.5 Environmental hazards

ADR: Not applicable

ICAO-IATA/DGR: Not applicable

IMDG-Code/GGVSee: Not applicable

ADN: Not applicable

14.6 Special precautions for user

None

Land transport (ADR)	Air transport (ICAO-IATA/DGR)	Sea transport (IMDG-Code/GGVSee)	Inland waterways transport (ADN)
None	None	None	None

15. REGULATORY INFORMATION:**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

The following ingredients are found on the lists proceeding them:

Silver SARA 313

Epoxy resin None.

Epoxy diluent None.

US Federal Regulations**SARA 311/312 Hazardous Categorization**

Acute Health Hazard Yes

Chronic Health Hazard Yes

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and of the Code of Federal Regulations, Part 372.

Component	CAS	Weight %
Silver	7440-22-4	< 75

State Regulations**California Proposition 65**

This product contains NO chemical(s) known to the State of California to cause cancer and birth defects or

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other reproductive harm.

TSCA (Toxic Substances Control Act)

All ingredients listed or exempt.

This safety data sheet is in compliance with the following EU legislation and its adaptations –as far as applicable and to the best of our knowledge: 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments.

15.2 Chemical Safety Assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

National Inventory	Status
Australia (AICS)	Yes
Canada (DSL)	Yes
China (IECSC)	Yes
Europe (EINEC/ELINCS/NLP)	Yes
Japan (ENCS)	Yes
Korea (KECI)	Yes
New Zealand (NZIoC)	Yes
Philippines (PICCS)	Yes
USA (TSCA)	Yes

16. OTHER INFORMATION:

HMIS Ratings: H – 2 F – 1 R – 0

Full text Risk and Hazard codes

GHS07

GHS09

Acute Toxicity, Oral

Category 4

Skin Irritation

Category 2

Skin Sensitization

Category 1

Eye Irritation

Category 2

Germ Cell Mutagenicity

Category 2

Aquatic Toxicity, Acute

Category 1

Aquatic Toxicity, Chronic

Category 1

Aquatic Toxicity, Chronic

Category 2

H302

Harmful if swallowed.

H315

Causes skin irritation.

H317

May cause an allergic skin reaction.

H319

Causes serious eye irritation.

H341

Suspected of causing genetic defects.

H410

Very toxic to aquatic life with long-lasting effects.

H411

Toxic to aquatic life with long-lasting effects.

Other Information

This SDS is a Hazard Communication document and should be used in assessing risk. Many factors will determine whether the reported hazards are risks in the workplace or other settings. Risks may be determined by reference to Exposure Scenarios.

To the best of our knowledge, the information contained herein is accurate and meets all State and Federal guidelines and EC Directive 1272/2008. However, Pulsar Chem. Inc. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Final determination of the suitability of any material is the sole responsibility of the user.

SDS prepared 3rd of May 2019.