Celanese

# *PE826*

Version 3.0 Revision Date 2018/02/13
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This SDS adheres to the standards and regulatory requirements of China and may not meet the regulatory requirements in other countries.

## Section 1 - Chemical and Enterprise Identification

**Product name** : PE826

**Product name in English** : PE826

**Recommended use of the chemical and restriction on use**

Recommended use : For industrial use only.
Paste for electronic industry

Restrictions on use : Do not use product for anything outside of the above specified uses.

**Manufacturer, importer, supplier**

Company : Celanese (Shanghai) International Trading Co., Ltd
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**Emergency telephone number** : CHEMTREC International: +1-703-527 3887, +86 532 8388-9090 (China, 24h)

**Date of first preparation** : 2014/05/05

## Section 2 - Hazard Identification

**GHS Hazard Category**

| | | |
|---|---|---|
| Flammable liquids | : | Category 4 |
| Acute toxicity (Inhalation) | : | Category 4 |
| Serious eye damage/eye irritation | : | Category 2B |
| Specific target organ toxicity - single exposure | : | Category 2 (Respiratory system, Central nervous system) |
| Specific target organ toxicity - repeated exposure | : | Category 1 (Respiratory system) |
| Acute aquatic toxicity | : | Category 1 |
| Chronic aquatic toxicity | : | Category 2 |

Endpoints which are not classified, cannot be classified or are not applicable are not shown.

**Label content**

Pictogram :

| | | |
|---|---|---|
| Signal word | : | Danger |
| Hazardous warnings | : | Combustible liquid.<br>Causes eye irritation.<br>Harmful if inhaled.<br>May cause damage to organs. (Respiratory system, Central nervous system)<br>Causes damage to organs through prolonged or repeated exposure. (Respiratory system)<br>Very toxic to aquatic life.<br>Toxic to aquatic life with long lasting effects. |
| Precautionary statements | : | **Preventive Measures:**<br>Keep away from heat/sparks/open flames/hot surfaces. No smoking.<br>Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.<br>Wash skin thoroughly after handling.<br>Do not eat, drink or smoke when using this product.<br>Use only outdoors or in a well-ventilated area.<br>Avoid release to the environment.<br>Wear protective gloves/ protective clothing/ eye protection/ face protection.<br>**Accident Response:**<br>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.<br>Get medical advice/ attention if you feel unwell.<br>If eye irritation persists: Get medical advice/ attention.<br>In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.<br>Collect spillage.<br>**Safe Storage:**<br>Store in a well-ventilated place. Keep cool.<br>Store locked up.<br>**Waste Disposal:**<br>Dispose of contents/ container to an approved waste disposal plant. |

**Main Symptom After Contact**
No information available.

## Section 3 - Ingredients/Composition Information

**Chemical nature** : Mixture

**Components**

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| Copper (powder) | 7440-50-8 | 40 - 50% |
| Dimethyl glutarate | 1119-40-0 | 10 - 20% |
| Silver powder | 7440-22-4 | 10 - 20% |
| Dimethyl succinate | 106-65-0 | 1 - 10% |

## Section 4 - First-aid Measures

| | | |
|---|---|---|
| **Inhalation** | : | If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention. |
| **Skin contact** | : | Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use. |
| **Eye contact** | : | Immediately flush eyes for at least 15 minutes. Get medical attention. |
| **Ingestion** | : | If swallowed Rinse mouth with water. Call a physician or poison control centre immediately. DO NOT induce vomiting unless directed to do so by a physician or poison control center. |
| **Most important symptoms/effects, acute and delayed** | : | No information available. |
| **Protection of first-aiders** | : | No information available. |
| **Notes to physician** | : | No information available. |

## Section 5 - Fire-fighting Measures

| | | |
|---|---|---|
| **Suitable extinguishing media** | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Water spray, Dry chemical, Carbon dioxide (CO2) |
| **Specific hazards** | : | Hazardous decomposition products formed under fire conditions. (see also section 10) Avoid breathing decomposition products. |
| **Special protective equipment for firefighters** | : | Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus for firefighting if necessary. |
| **Specific extinguishing methods** | : | No information available. |
| **Further information** | : | Evacuate personnel to safe areas. Stop spill/release if it can be done with minimal risk. Do not allow run-off from fire fighting to enter drains or water courses. |

## Section 6 - Leak Emergency Treatment

| | | |
|---|---|---|
| **Protective measures, devices and emergency treatment procedure for workers** | : | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Wear suitable protective equipment. |
| **Environmental precautions** | : | Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Clean contaminated floors and objects thoroughly while observing environmental regulations. |

**Methods and materials for containment and cleaning up** : Contain spill. Soak up with inert absorbent material. Collect and contain contaminated absorbent and dike material for disposal. Keep in suitable, closed containers for disposal. Ventilate the area. Clean contaminated surface thoroughly.

**Prevention of secondary hazards** : No information available.

**Additional advice** : Dispose of in accordance with local regulations.

## Section 7 - Operation Handling and Storage

### Operation Handling

Technical measures/Precautions : Avoid inhalation, ingestion and contact with skin and eyes. Do not use in areas without adequate ventilation. Keep container closed when not in use. Take care to avoid waste and spillage when weighing, loading and mixing the product.

Precautions for safe handling : Avoid formation of dust and aerosols. Keep away from heat and sources of ignition.

### Storage

Suitable storage conditions : Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from sources of ignition - No smoking. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Keep container closed when not in use. Do not reuse empty container.

Storage period: Stable under normal conditions.

## Section 8 - Exposure Control and Personal Protection

### Control parameters

Applicable occupational exposure limits are listed below.

| Chemical name | Occupational Exposure Limits | Regulation |
|---|---|---|
| Copper (powder) | | |
| TWA (as Cu) | 1 mg/m3 (Dust.) | GBZ 2.1 |
| TWA (as Cu) | 0.2 mg/m3 (Fume.) | GBZ 2.1 |
| TWA (as Cu) | 1 mg/m3 (Dust and mist.) | US ACGIH |
| TWA (as Cu) | 0.2 mg/m3 (Fume.) | US ACGIH |
| Silver powder | | |
| TWA | 0.1 mg/m3 (Dust and fume.) | US ACGIH |

**Engineering controls** : Local exhaust or a laboratory hood should be used when handling the materials. Maintain air concentrations below occupational exposure standards.

**Biological occupational exposure limits** : No information available.

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | Provide adequate ventilation. No personal respiratory protective equipment normally required. Where there is potential for airborne exposures in excess of applicable limits, wear approved respiratory protection with dust/mist cartridge. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.<br>Persons performing maintenance or repairs on exhaust system equipment (e.g. ducts) may need to use respirators and protective clothing to prevent exposure to any accumulated residues. |
| Hand protection | : | Material: Impervious gloves<br>Gloves must be inspected prior to use., Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough., The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., The exact break through time can be obtained from the protective glove producer and this has to be observed., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. |
| Eye protection | : | Wear safety glasses with side shields. |
| Skin protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.<br>Lightweight protective clothing<br>Safety shoes |
| **Hygiene measures** | : | Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing and protective equipment before entering eating areas. Remove and wash contaminated clothing before re-use. |

## Section 9 - Physical and Chemical Properties

**Appearance (Physical state, form, colour, etc.)**

| | | |
|---|---|---|
| Physical state | : | liquid |
| Form | : | viscous liquid |
| Colour | : | grey, silver |

| | | |
|---|---|---|
| **Odour** | : | like fruit |
| **Odour Threshold** | : | No information available. |
| **pH** | : | No information available. |

**Melting point/freezing point**
No information available.

**Boiling point, initial boiling point and boiling range**
No information available.

| | | |
|---|---|---|
| **Flash point** | : | 91 °C<br>Method: closed cup |
| **Evaporation rate** | : | No information available. |
| **Flammability (solid, gas)** | : | No information available. |

**Upper/lower flammability or explosive limits**

| | | |
|---|---|---|
| Upper explosion limit | : | No information available. |
| Lower explosion limit | : | No information available. |

| | | |
|---|---|---|
| **Vapour pressure** | : | No information available. |
| **Vapour density** | : | No information available. |

**Density**

| | | |
|---|---|---|
| Density | : | 2.60 g/cm3 |

**Solubility(ies)**

| | | |
|---|---|---|
| Water solubility | : | insoluble |
| **Partition coefficient: n-octanol/water** | : | No information available. |

**Auto-ignition temperature**
No information available.

| | | |
|---|---|---|
| **Decomposition temperature** | : | No information available. |

**Viscosity**

| | | |
|---|---|---|
| Viscosity, kinematic | : | No information available. |
| **Molecular weight** | : | No information available. |

## Section 10 - Stability and Reactivity

| | | |
|---|---|---|
| **Reactivity** | : | No information available. |
| **Chemical stability** | : | Stable at normal temperatures and storage conditions. |
| **Possibility of hazardous reactions** | : | Polymerization will not occur. |
| **Conditions to avoid** | : | None reasonably foreseeable. |
| **Materials to avoid** | : | Acids, bases and strong oxidizing agents |

**Hazardous decomposition products** : No decomposition if stored and applied as directed.

Under fire conditions:

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke)., Metal oxides

## Section 11 - Toxicological Information

### Acute toxicity

Oral

| | | |
|---|---|---|
| Copper (powder) | : | LD50/Rat: > 2,500 mg/kg<br>The substance or mixture has no acute oral toxicity |
| Dimethyl glutarate | : | LD50/Rat: > 5,000 mg/kg<br>The substance or mixture has no acute oral toxicity |
| Silver powder | : | LD50/Rat: > 2,000 mg/kg<br>Method: OECD Test Guideline 401<br>The substance or mixture has no acute oral toxicity |
| Dimethyl succinate | : | LD50/Rat: 6,892 mg/kg |

Inhalation

| | | |
|---|---|---|
| Copper (powder) | : | LC50/Rat: 2.83 mg/l<br>Respiratory effects, Altered respiratory rate, Breathing difficulties, Laboured breathing, Central nervous system effects, Abnormal posture |
| Dimethyl glutarate | : | Toxic effects cannot be excluded |
| Silver powder | : | LC50/4 h/Rat(dust/mist): > 5.16 mg/l<br>Method: OECD Test Guideline 436<br>The substance or mixture has no acute inhalation toxicity |
| Dimethyl succinate | : | LC50/4 h/Rat(dust/mist): > 5.9 mg/l<br>Target Organs: Respiratory Tract<br>Respiratory tract irritation |

Dermal

| | | |
|---|---|---|
| Copper (powder) | : | LD50/Rat: > 2,000 mg/kg<br>The substance or mixture has no acute dermal toxicity |
| Dimethyl glutarate | : | LD50/Rabbit: > 5,000 mg/kg<br>The substance or mixture has no acute dermal toxicity |
| Silver powder | : | LD50/Rat: > 2,000 mg/kg<br>Method: OECD Test Guideline 402<br>The substance or mixture has no acute dermal toxicity<br>Information given is based on data obtained from similar substances. |
| Dimethyl succinate | : | LD50/Rabbit: > 5,000 mg/kg<br>The substance or mixture has no acute dermal toxicity |

### Skin corrosion/irritation

| | | |
|---|---|---|
| Copper (powder) | : | Species: Rabbit<br>Result: No skin irritation<br>Classification: Not classified as irritant |
| Dimethyl glutarate | : | Species: Rabbit<br>Result: No skin irritation<br>Classification: Not classified as irritant |
| Silver powder | : | Species: Rabbit<br>Result: No skin irritation<br>Classification: No skin irritation<br>Method: OECD Test Guideline 404 |

| | | |
|---|---|---|
| Dimethyl succinate | : | Species: Rabbit<br>Result: No skin irritation<br>Classification: Not classified as irritant |

**Serious eye damage/eye irritation**

| | | |
|---|---|---|
| Copper (powder) | : | Species: Rabbit<br>Result: No eye irritation<br>Classification: Not classified as irritant |
| Dimethyl glutarate | : | Species: Rabbit<br>Result: Mild eye irritation<br>Classification: Irritating to eyes. |
| Silver powder | : | Species: Rabbit<br>Result: No eye irritation<br>Classification: No eye irritation<br>Method: OECD Test Guideline 405 |
| Dimethyl succinate | : | Species: Rabbit<br>Result: Mild eye irritation<br>Classification: Irritating to eyes. |

**Respiratory or skin sensitisation**

| | | |
|---|---|---|
| Copper (powder) | : | Maximisation Test<br>Species: Guinea pig<br>Result: Did not cause sensitisation on laboratory animals.<br>Classification: Not a skin sensitizer. |
| Dimethyl glutarate | : | Species: Guinea pig<br>Result: Animal test did not cause sensitization by skin contact.<br>Classification: Not a skin sensitizer. |
| Silver powder | : | Species: Guinea pig<br>Result: Does not cause skin sensitisation.<br>Classification: Does not cause skin sensitisation.<br>Method: OECD Test Guideline 406<br>Information given is based on data obtained from similar substances. |
| Dimethyl succinate | : | Local lymph node test<br>Species: Mouse<br>Result: Does not cause skin sensitisation.<br>Classification: Not a skin sensitizer.<br>Animal test did not cause sensitization by skin contact. |

**Germ cell mutagenicity**

| | | |
|---|---|---|
| Copper (powder) | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects. |
| Dimethyl glutarate | : | Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. |
| Silver powder | : | Weight of evidence does not support classification as a germ cell mutagen. Overall weight of evidence indicates that the substance is not mutagenic. Information given is based on data obtained from similar substances. |
| Dimethyl succinate | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals. |

**Carcinogenicity**

| | | |
|---|---|---|
| Copper (powder) | : | Not classifiable as a human carcinogen.<br>Overall weight of evidence indicates that the substance is not carcinogenic. |
| Silver powder | : | Weight of evidence does not support classification as a carcinogen<br>Overall weight of evidence indicates that the substance is not carcinogenic. |

**Reproductive toxicity**

| | | |
|---|---|---|
| Copper (powder) | : | Reproductive toxicity: No toxicity to reproduction<br>Animal testing showed no reproductive toxicity.<br>Teratogenicity: Evidence suggests the substance is not a developmental toxin in animals. |
| Dimethyl glutarate | : | Reproductive toxicity: No toxicity to reproduction<br>Animal testing showed no reproductive toxicity.<br>Teratogenicity: Animal testing showed no developmental toxicity. |
| Silver powder | : | Teratogenicity: Animal testing showed no developmental toxicity.<br>Information given is based on data obtained from similar substances. |
| Dimethyl succinate | : | Reproductive toxicity: No toxicity to reproduction<br>Animal testing showed no reproductive toxicity.<br>Teratogenicity: Animal testing showed no developmental toxicity. |

**Specific Target Organ Toxicity**

Specific target organ toxicity - single exposure

| | | |
|---|---|---|
| Copper (powder) | : | Likely route of exposure: Inhalation<br>Target Organs: Respiratory system, Central nervous system<br>The substance or mixture is classified as specific target organ toxicant, single exposure, category 2. |
| Silver powder | : | The substance or mixture is not classified as specific target organ toxicant, single exposure. |
| Dimethyl succinate | : | The substance or mixture is not classified as specific target organ toxicant, single exposure.<br><br>The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. |

Specific target organ toxicity - repeated exposure

| | | |
|---|---|---|
| Copper (powder) | : | The substance or mixture is not classified as specific target organ toxicant, repeated exposure. |
| Silver powder | : | The substance or mixture is not classified as specific target organ toxicant, repeated exposure. |

**Aspiration hazard**

| | | |
|---|---|---|
| Copper (powder) | : | No aspiration toxicity classification |
| Silver powder | : | No aspiration toxicity classification |

**Other**

| | | |
|---|---|---|
| Copper (powder) | : | Repeated dose toxicity:<br>Oral - feed/multiple species |

No toxicologically significant effects were found.

Dimethyl glutarate : Repeated dose toxicity:
Inhalation/Rat
Target Organs: Respiratory Tract
Respiratory tract damage

Silver powder : Repeated dose toxicity:
Ingestion/Rat 30 d
NOAEL: 150 mg/kg
No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

Dimethyl succinate : Repeated dose toxicity:
Inhalation/Rat
Target Organs: Respiratory Tract
Respiratory tract damage
Dermal/Rat
Target Organs: Respiratory Tract
Respiratory tract damage

## Section 12 - Ecological Information

**Ecotoxicity effects**

Acute and prolonged toxicity to fish

Copper (powder) : LC50/96 h/Oncorhynchus mykiss (rainbow trout): 0.0028 mg/l

Dimethyl glutarate : LC50/96 h/Lepomis macrochirus (Bluegill sunfish): 30.9 mg/l
LC50/96 h/Pimephales promelas (fathead minnow): 19.6 mg/l

Silver powder : LC50/96 h/Fish (unspecified species): 0.107 mg/l
Method: OECD Test Guideline 203
Information given is based on data obtained from similar substances.

Dimethyl succinate : LC50/96 h/Danio rerio (zebra fish): 50 - 100 mg/l
Method: OECD Test Guideline 203

Toxicity to aquatic plants

Dimethyl glutarate : EC50/96 h/Algae: 7.186 mg/l

Silver powder : EC50/96 h/Pseudokirchneriella subcapitata (green algae): 0.19 mg/l
Information given is based on data obtained from similar substances.
NOEC/14 d/Algae: 0.0012 mg/l
Information given is based on data obtained from similar substances.

Dimethyl succinate : EC50/72 h/Pseudokirchneriella subcapitata (green algae): > 10 mg/l

Acute toxicity to aquatic invertebrates

Dimethyl glutarate : EC50/48 h/Daphnia magna (Water flea): 1,275 mg/l

Silver powder : EC50/48 h/Ceriodaphnia dubia (water flea): 0.16 mg/l
Information given is based on data obtained from similar substances.

Dimethyl succinate : EC50/48 h/Daphnia magna (Water flea): 3,317.3 mg/l

Chronic toxicity to fish

Silver powder : NOEC/32 d/Oncorhynchus mykiss (rainbow trout): 0.0012 mg/l
Information given is based on data obtained from similar substances.

Chronic toxicity to aquatic Invertebrates
Silver powder : NOEC/21 d/Daphnia magna (Water flea): 0.00327 mg/l
Information given is based on data obtained from similar substances.

**Persistence and degradability**
Dimethyl glutarate : Exposure time: 28 d
Biodegradation: 98 %
Readily biodegradable.
Silver powder : Result: Not biodegradable
Dimethyl succinate : Exposure time: 28 d
Biodegradation: 74.1 %
Readily biodegradable.

**Bioaccumulation**
Dimethyl glutarate : Bioconcentration factor (BCF): 3.16
Bioaccumulation is unlikely.
Dimethyl succinate : Bioaccumulation is unlikely.

**Mobility in soil**
No information available.

**Other adverse effects**
No information available.

## Section 13 - Waste Disposal

**Waste disposal methods** : If recycling is not practicable, dispose of in compliance with local regulations. Never place unused product down any indoor or out door drain. Do not reuse empty container. Contaminated/not cleaned containers should be treated/handled like product waste. Dispose of container properly. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

**Contaminated packaging** : Dispose of in accordance with local regulations.

## Section 14 - Transport Information

**China Dangerous Goods Regulation**
UN number : 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Silver, Copper powder)
Class : 9
Packing group : III

**IMDG**
UN number : 3082
UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Silver, Copper powder)
Transport hazard class : 9
Packing group : III
Marine pollutant : yes

**IATA**

| | | |
|---|---|---|
| UN number | : | 3082 |
| UN proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver, Copper powder) |
| Transport hazard class | : | 9 |
| Packing group | : | III |
| Matters needing attention for transportation | : | Not applicable |

## Section 15 - Regulatory Information

Regulation on the Safety Management of Hazardous Chemicals
Production Safety Law of the People's Republic of China
Law of the People's Republic of China on Prevention and Treatment of Occupational Disease
Environmental Protection Law of the People's Republic of China
Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution
Marine Environment Protection Law of the People's Republic of China
Fire Protection Law of the People's Republic of China
Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes
Occupational exposure limits for hazardous agents in the workplace Part 1 Chemical hazardous agents (GBZ2.1)
Occupational exposure limits for hazardous agents in the workplace Part 2 Physical agents (GBZ2.2)
General rule for classification and hazard communication of chemicals (GB13690)
Lists of Dangerous Goods (GB12268)
Dangerous goods classification (GB6944)
Common dangerous chemical storage rules (GB15603)
Packaging Symbols of Dangerous Goods (GB190)
National Hazardous Waste Inventory

## Section 16 - Other Information

**References**

SDS Number: 130000132826

**Revision Date/Version**

| | | |
|---|---|---|
| Date of first preparation | : | 2014/05/05 |
| Revision Date | : | 2018/02/13 |
| Version | : | 3.0 |

Significant change from previous version is denoted with a double bar.

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