

# SAFETY DATA SHEET

Creation Date 24-Nov-2010

Revision Date 19-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

**Product Name** o-Phenylenediamine dihydrochloride

**Cat No. :** AC218480000; AC218480250; AC218481000

**CAS No** 615-28-1

**Synonyms** 1,2-Benzenediamine dihydrochloride; 1,2-Phenylenediamine dihydrochloride.

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

|   |            |
|---|------------|
| Acute oral toxicity                         | Category 3 |
| Acute dermal toxicity                       | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 4 |
| Serious Eye Damage/Eye Irritation           | Category 2 |
| Skin Sensitization                          | Category 1 |
| Germ Cell Mutagenicity                      | Category 2 |
| Carcinogenicity                             | Category 2 |

### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

Toxic if swallowed  
May cause an allergic skin reaction  
Causes serious eye irritation  
Suspected of causing genetic defects  
Suspected of causing cancer  
Harmful in contact with skin or if inhaled

**Precautionary Statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Get medical attention/advice

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
Call a POISON CENTER or doctor if you feel unwell  
Take off contaminated clothing and wash before reuse  
If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor  
Rinse mouth

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

WARNING. Cancer - <https://www.p65warnings.ca.gov/>.

### 3. Composition/information on Ingredients

| Component                           | CAS No   | Weight % |
|-------------------------------------|----------|----------|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | >95      |

#### 4. First-aid measures

|  |  |
|--|--|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.  |
| <b>Eye Contact</b>                         | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.  |
| <b>Inhalation</b>                          | Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician or poison control center immediately.   |
| <b>Most important symptoms and effects</b> | May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing  |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

#### 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | No information available  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | Not applicable  |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | No data available   |
| <b>Lower</b>                            | No data available   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

**Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**

Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

**Health**  
3

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
N/A

#### 6. Accidental release measures

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. |
| <b>Environmental Precautions</b> | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities         |

should be advised if significant spillages cannot be contained.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and Storage

|                 |  |
|-----------------|--|
| <b>Handling</b> | Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. |
| <b>Storage.</b> | Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Strong oxidizing agents. .   |

## 8. Exposure controls / personal protection

|   |   |
|---|---|
| <b><u>Exposure Guidelines</u></b>           | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.   |
| <b>Engineering Measures</b>                 | Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.   |
| <b><u>Personal Protective Equipment</u></b> |   |
| <b>Eye/face Protection</b>                  | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.   |
| <b>Skin and body protection</b>             | Wear appropriate protective gloves and clothing to prevent skin exposure.   |
| <b>Respiratory Protection</b>               | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Recommended Filter type:</b>             | Particulates filter conforming to EN 143.   |
| <b>Hygiene Measures</b>                     | Handle in accordance with good industrial hygiene and safety practice.  |

## 9. Physical and chemical properties

|                                  |                          |                       |                          |
|----------------------------------|--------------------------|-----------------------|--------------------------|
| <b><u>Appearance</u></b>         |                          |                       |                          |
| <b>Physical State</b>            | Powder Solid             |                       |                          |
| <b>Color</b>                     | Light red                |                       |                          |
| <b>Odor</b>                      | No information available |                       |                          |
| <b>Odor Threshold</b>            | No information available |                       |                          |
| <b><u>Property</u></b>           | <b><u>Values</u></b>     | <b><u>Remarks</u></b> | <b><u>• Method</u></b>   |
| <b>Melting Point/Range</b>       | 258 °C / 496.4 °F        |                       |                          |
| <b>Softening Point</b>           | No data available        |                       |                          |
| <b>Boiling Point/Range</b>       | No information available |                       |                          |
| <b>Flash Point</b>               | No information available |                       |                          |
| <b>Flammability (liquid)</b>     | Not applicable           |                       |                          |
| <b>Flammability (solid,gas)</b>  | No information available |                       |                          |
| <b>Explosion Limits</b>          | No data available        |                       |                          |
| <b>Autoignition Temperature</b>  | Not applicable           |                       |                          |
| <b>Decomposition Temperature</b> | No data available        |                       |                          |
|                                  |                          | <b>Method -</b>       | No information available |
|                                  |                          | Solid                 |                          |

|   |                          |       |
|---|--------------------------|-------|
| pH                                      | No information available |       |
| Viscosity                               | Not applicable           | Solid |
| Water Solubility                        | No information available |       |
| Solubility in other solvents            | No information available |       |
| Partition Coefficient (n-octanol/water) |                          |       |
| Component                               | log Pow                  |       |
| 1,2-Benzenediamine, dihydrochloride     | 0.15                     |       |
| Vapor Pressure                          | No data available        |       |
| Density / Specific Gravity              | No data available        |       |
| Bulk Density                            | No data available        |       |
| Vapor Density                           | Not applicable           | Solid |
| Particle characteristics                | No data available        |       |
| <b>Other Information</b>                |                          |       |
| Molecular Formula                       | C6 H8 N2 . 2 H Cl        |       |
| Molecular Weight                        | 181.07                   |       |
| Evaporation Rate                        | Not applicable - Solid   |       |

## 10. Stability and reactivity

|                                  |  |
|----------------------------------|--|
| Reactive Hazard                  | None known, based on information available                               |
| Stability                        | Sensitivity to light.  |
| Conditions to Avoid              | Incompatible products. Exposure to light.                                |
| Incompatible Materials           | Strong oxidizing agents,   |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapors |
| Hazardous Polymerization         | Hazardous polymerization does not occur.                                 |
| Hazardous Reactions              | None under normal processing.  |

## 11. Toxicological information

### Information on expected route of exposure

|            |  |
|------------|--|
| Inhalation | Avoid breathing dust or spray mist. May be harmful if inhaled. |
| Ingestion  | May be harmful if swallowed.                                   |
| Eyes       | Avoid contact with eyes.                                       |
| Skin       | Avoid contact with skin.                                       |

### Toxicology data for the components

|  |                          |
|--|--------------------------|
| Toxicologically Synergistic Products   | No information available |
| (b) skin corrosion/irritation;         | No data available        |
| (c) serious eye damage/irritation;     | Category 2               |
| (d) respiratory or skin sensitization; |                          |
| Respiratory                            | No data available        |
| Skin                                   | Category 1               |
|  | No information available |

(e) germ cell mutagenicity; Category 2  
Animal experiments showed mutagenic and teratogenic effects

(f) carcinogenicity; Category 2  
Suspected human carcinogen

| Component                           | CAS No   | IARC     | NTP        | ACGIH      | OSHA | Mexico     |
|-------------------------------------|----------|----------|------------|------------|------|------------|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | Group 2B | Not listed | Not listed | X    | Not listed |

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available  
Target Organs No information available.

(j) aspiration hazard; Not applicable  
Solid

Symptoms / effects, both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Persistence and Degradability Persistence is unlikely

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

| Component                           | log Pow |
|-------------------------------------|---------|
| 1,2-Benzenediamine, dihydrochloride | 0.15    |

## 13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

UN-No UN2811  
Proper Shipping Name Toxic solid, organic, n.o.s.

**Technical Shipping Name** (1,2-PHENYLENEDIAMINE DIHYDRATE)  
**Hazard Class** 6.1  
**Packing Group** III

**TDG**

**UN-No** UN2811  
**Proper Shipping Name** Toxic solid, organic, n.o.s.  
**Technical Shipping Name** (1,2-PHENYLENEDIAMINE DIHYDRATE)  
**Hazard Class** 6.1  
**Packing Group** III

**IATA**

**UN-No** UN2811  
**Proper Shipping Name** Toxic solid, organic, n.o.s.  
**Technical Shipping Name** (1,2-PHENYLENEDIAMINE DIHYDRATE)  
**Hazard Class** 6.1  
**Packing Group** III

**IMDG/IMO**

**UN-No** UN2811  
**Proper Shipping Name** Toxic solid, organic, n.o.s.  
**Technical Shipping Name** (1,2-PHENYLENEDIAMINE DIHYDRATE)  
**Hazard Class** 6.1  
**Packing Group** III

## 15. Regulatory Information

**United States of America Inventory**

| Component                              | CAS No   | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|--|----------|------|--|--------------------------------|
| 1,2-Benzenediamine,<br>dihydrochloride | 615-28-1 | X    | ACTIVE   | -                              |

**Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical  
Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component                              | CAS No   | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|--|----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| 1,2-Benzenediamine,<br>dihydrochloride | 615-28-1 | X   | -   | 210-418-7 | -     | X    |      | X    | X     | KE-02177 |

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****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 Title 40 of the Code of Federal Regulations, Part 372.

| Component                              | CAS No   | Weight % | SARA 313 - Threshold<br>Values % | SARA 313 - Reporting<br>thresholds |
|--|----------|----------|----------------------------------|------------------------------------|
| 1,2-Benzenediamine,<br>dihydrochloride | 615-28-1 | >95      | 1.0 %                            | -                                  |

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

| Component                           | CAS No   | California Prop. 65 | Prop 65 NSRL | Category   |
|-------------------------------------|----------|---------------------|--------------|------------|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | Carcinogen          | 44 µg/day    | Carcinogen |

**U.S. State Right-to-Know Regulations**

| Component                           | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------------------------|---------------|------------|--------------|----------|--------------|
| 1,2-Benzenediamine, dihydrochloride | -             | X          | -            | -        | -            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component                           | CAS No   | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-------------------------------------|----------|---|---|---|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | -   | Use restricted. See entry 75. (see link for restriction details)              | -   |

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

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



| Component                           | CAS No   | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-------------------------------------|----------|----------------|------------------------------|---------------------------|--|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component                           | CAS No   | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-------------------------------------|----------|---|--|----------------------------|------------------------------------|
| 1,2-Benzenediamine, dihydrochloride | 615-28-1 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other Information

**Prepared By**

Product stewardship (Regulatory Affairs)  
Thermo Fisher Scientific  
email - begel.sdsdesk@thermofisher.com

**Creation Date**

24-Nov-2010

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19-Dec-2025

**Print Date**

19-Dec-2025

**Revision Summary**

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**