# D-PENICILLAMINE
## SAFETY DATA SHEET
Revision Date 2016-07-15

## 1. IDENTIFICATION

| | |
|---|---|
| Product Identifier | D-Penicillamine |
| Product Number | P107 |
| Distributor Name | TOKU-E Company |
| Distributor Address | 715 W Orchard Dr. Suite 3<br>Bellingham, WA 98225 |
| Phone Number | (360)734-1789 |
| Emergency Phone Number (International) | +1 (352) 353-3500 |
| Emergency Phone Number (US Only) | 1 (800) 535-5053 |
| Safety Data Sheet Issued by | TOKU-E USA |
| CAS-Number | [52-67-5] |
| EC/ REACH Number | [200-148-8] |
| Recommended Use | Research use only |
| Restrictions of Use | Not for human or animal use |

## 2. HAZARD(S) IDENTIFICATION

GHS Classification

Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity, single exposure, Respiratory (Category 3)

GHS Label Elements, Including

Signal Word: Warning

Hazard Statements

| | |
|---|---|
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

Precautionary Statements

| | |
|---|---|
| P264 | Wash hands/skin thoroughly after handling. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P321 | Specific treatment, see applicable response statements on this label |
| P332+P313 | IF SKIN irritation occurs: Get medical advice/attention. |
| P362 | Take off contaminated clothing. |
| P305+P351+P3 | IF IN EYES: Rinse cautiously with water for several minutes. Remove |
| P305... (cont) | contact lenses, if present and easy to do. Continue rinsing. |
| P337 | If eye irritation persists: |
| P313 | Get medical advice/attention. |
| P261 | Avoid breathing dust/fumes/gas/mist/vapors/spray. |
| P271 | Use only outdoors or in a well-ventilated area. |

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|---|---|
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P304.. (cont) | for breathing. |
| P312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed |
| P405 | Store locked up |
| P501 | Dispose of contents/container in accordance with governmental regulation |
| by GHS | |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|---|---|
| Synonym(s) | Cuprenil, Cuprimine, D-Mercaptovaline, D-3-Mercaptovaline, Metalcaptase, D-Penamine, Penicillamin, Penicillamine, D-Penicillamine, (S)-Penicillamin, Reduced penicillamine, Reduced D-penicillamine, Trolovol, D-Valine, 3-mercapto- |
| Formula | $C_5H_{11}NO_2S$ |
| Molecular Weight | 149.21 g/mol |
| CAS-Number | [52-67-5] |
| EC/ REACH Number | [200-148-8] |
| Hazardous Components | D-Penicillamine<br>Skin irritation (Category 2)<br>Eye irritation (Category 2A)<br>Specific target organ toxicity, single exposure, Respiratory (Category 3) |

## 4. FIRST-AID MEASURES

| | |
|---|---|
| General Advice | Consult a doctor/physician if exposed - additional medical care may be required. Show this Safety Data Sheet to the medical provider. |
| If Inhaled | If inhaled, move to fresh air. If not breathing, give artificial respiration and immediately call local emergency telephone number. |
| In Case of Skin Contact | Wash skin thoroughly with soap and water. |
| In Case of Eye Contact | Flush eye with water. After initial flush, remove any contact lenses and continue flushing for at least 15 minutes. |
| If Swallowed | Rinse mouth with water. Immediately call a doctor, physician, or poison control center. Never give anything by mouth to an unconscious person. |
| Specific Treatment | Please see Section 2 precautionary statements and/or Section 11. |

## 5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| Suitable Extinguishing Media | Water spray, alcohol-resistant foam, dry chemical, carbon dioxide |
| Special Protective Equipment for Firefighters | Wear self-contained breathing apparatus |
| Hazardous Combustion Products | Formed under fire conditions: carbon, nitrogen, and sulfur oxides |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| General | Evacuate personnel to a safe location. Use appropriate personal protective equipment while in contact with product. Avoid dust formation. Ensure adequate ventilation. |
| Personal Precautions | Prevent contamination of skin, eyes and clothing with appropriate protective equipment (Section 8). Wear respiratory protection. |
| Environmental Precautions | Recover waste, if possible, and place in suitable closed container for licensed disposal. Prevent spillage - do not let product enter drains. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| Precautions for Safe Handling | Wear appropriate protective clothing/gear to prevent contact with skin and eyes. Provide exhaust ventilation or respiratory protection in areas where dust is formed. |
| Precautions for Safe Storage | Store in a tightly closed container. Protect from humidity.<br>Recommended storage temperature: 2-8°C |
| Incompatibilities | No Data Available |

## 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Contains no substance/substances with occupational exposure limit values

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|---|---|
| OSHA Permissible Exposure Limits | No Data Available |
| NIOSH Recommended Exposure Limits | No Data Available |
| ACGIH Threshold Limit Values | No Data Available |

| | |
|---|---|
| PPE: Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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) |
| PPE: Hand Protection | Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands |
| PPE: Eye Protection | Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU) |
| PPE: Skin and Body Protection | Handle with gloves. Wear protective clothing. Choose |

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|---|---|
| | body protection according to the amount and concentration of the dangerous substance at the work place. When deemed needed according to the concentration and amount of this product, use a complete body suit |

## 9. PHYSICAL/CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance | Solid |
| Lower Flammability/Explosion Limit | No Data Available |
| Upper Flammability/Explosion Limit | No Data Available |
| Odor | No Data Available |
| Vapor Pressure | No Data Available |
| Odor Threshold | No Data Available |
| Vapor Density | No Data Available |
| pH | No Data Available |
| Relative Density | No Data Available |
| Melting Point/Freezing Point | No Data Available |
| Water Solubility | No Data Available |
| Solubility in Other Solvents | No Data Available |
| Boiling Point and Range | No Data Available |
| Flash Point | No Data Available |
| Evaporation rate | No Data Available |
| Flammability (solid, gas) | No Data Available |
| Partition Coefficient: n-octanol/water | No Data Available |
| Ignition Temperature | No Data Available |
| Auto-Ignition Temperature | No Data Available |
| Decomposition Temperature | No Data Available |
| Viscosity | No Data Available |
| Density | No Data Available |
| Optical Rotation | No Data Available |
| Absorbance (290nm, 5% in $H_2O$) | No Data Available |
| Water Content (Loss on Drying) | No Data Available |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Chemical Stability | Stable under recommended storage conditions |
| Possibility of Hazardous Reactions | No Data Available |
| Conditions to Avoid | No Data Available |
| Materials to Avoid | Strong oxidizing agents |
| Hazardous Decomposition Products | Formed under fire conditions: carbon, nitrogen, and sulfur oxides |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Oral $LD_{50}$ | Rat: 6170 mg/kg |
| Oral TDLo | Human - Woman: 900 mg/kg/26W-I<br>Human - Woman: 650 mg/kg/81W-I<br>Human - Woman: 112 mg/kg/1W-I<br>Human - Woman: 105 mg/kg/6W-I<br>Human - Man: 400 mg/kg/4W-I |

| | |
|---|---|
| | Human - Woman: 150 mg/kg/30D-I<br>Human: 21 mg/kg/D<br>Human: 893 mg/kg/D<br>Human - Child: 40 mg/kg/1W-I<br>Human - Man: 482 mg/kg/19W-I |
| Inhalation $LC_{50}$ | No Data Available |
| Dermal $LD_{50}$ | No Data Available |
| Intraperitoneal $LD_{50}$ | Rat: 2080 mg/kg |
| Intravenous $LD_{50}$ | Rat: 2000 mg/kg |
| Subcutaneous $LD_{50}$ | Rat: 4020 mg/kg |
| Skin Corrosion/Irritation | No Data Available |
| Serious Eye Damage/ Eye Irritation | No Data Available |
| Respiratory or Skin Sensitization | No Data Available |
| Germ Cell Mutagenicity | **Human Lymphocyte 2 gm/L**<br>Cytogenic analysis<br>**Human Lymphocyte 400 mg/L**<br>Sister chromatid exchange<br>**Hamster lung 8 gm/L**<br>Cytogenic analysis<br>**Hamster lung 1 gm/L**<br>Sister chromatid exchange |
| Carcinogenicity | This substance has not been identified as a potential carcinogen within the National Toxicology Program Report on Carcinogens or within the International Agency for Research on Cancer Monograph.<br>**TDLo Human - Child: 122 gm/kg/3Y-C, oral**<br>Tumorigenic - Carcinogenic by RTECS criteria<br>Blood - leukemia<br>**TDLo Mouse: 2 gm/kg/4W-I, intraperitoneal**<br>Tumorigenic - equivocal tumorigenic agent by RTECS criteria<br>Blood - leukemia<br>Blood - lymphoma, including Hodgkin's disease |
| Reproductive Toxicity | No Data Available |
| Specific Target Organ Toxicity: Single Exposure (Globally Harmonized System) | Respiratory |
| Specific Target Organ Toxicity: Repeated Exposure (Globally Harmonized System) | No Data Available |
| Aspiration Hazard | No Data Available |
| Potential Heath Effects | See Section 2, Hazard(s) Identification |
| Signs and Symptoms of Exposure | To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated |
| Synergistic Effects | No Data Available |
| Additional Information | No Data Available |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| Toxicity | No Data Available |
| Persistence and Degradability | No Data Available |
| Bio accumulative Potential | No Data Available |
| Mobility in Soil | No Data Available |
| PBT and vPvB Assessment | No Data Available |

In the absence of complete ecological information, treat product as environmentally hazardous. Use proper storage, handling, and disposal to prevent unintentional release into the environment.

## 13. DISPOSAL CONCENTRATIONS

| | |
|---|---|
| Product | Dispose of product through a licensed disposal company. |
| Contaminated Packaging | Dispose of as unused product. |

## 14. TRANSPORTATION INFORMATION

| | |
|---|---|
| DOT (US) | Not a Dangerous Good |
| IMDG | Not a Dangerous Good |
| IATA | Not a Dangerous Good |

## 15. REGULATORY INFORMATION

| | |
|---|---|
| SARA 302 Components | |
| | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 313 Components | |
| | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313. |
| SARA 311/312 Hazards | |
| | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 311/312 |
| Massachusetts Right to Know | No components are subject to the Massachusetts Right to Know Act |
| Pennsylvania Right to Know | No components are subject to the Pennsylvania Right to Know Act |
| New Jersey Right to Know | No components are subject to the New Jersey Right to Know Act |
| California Prop. 65 Components | Reproductive<br>WARNING! This product contains a chemical known to the State of California to cause birth defects or other developmental harm<br>Penicillamine<br>CAS Number[52-67-5]<br>Revision Date 1991/01/01 |
| EU Information | SDS in accordance with REACH 1907/2006<br>EC/ REACH Number [200-148-8]<br>CAS-Number [52-67-5]<br>Name: D-Penicillamine<br>Envisaged Registration Deadline: 30/11/2010<br>See GHS Information under Section 2, Hazard |

Identification

## 16. OTHER INFORMATION

Revision Date: 2016-07-15

| | | |
|---|---|---|
| HMIS Rating | Health Hazard | 2 |
| | Chronic Health Hazard | Y |
| | Flammability | 0 |
| | Physical Hazard | 0 |
| NFPA Rating | Health Hazard | 2 |
| | Fire Hazard | 0 |
| | Reactivity Hazard | 0 |

This safety data sheet represents TOKU-E Company's current understanding of the hazards associated with this product. The stated hazard information is based on existing experimental data and is not guaranteed to be all-inclusive. TOKU-E Company strives to maintain current and comprehensive safety information but recognizes that this safety data sheet may require revision as new information becomes available. TOKU-E Company shall not be held liable for damage or injury resulting from contact, handling, or storage of this product.