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This Safety Data Sheet contains 16 sections. All 16 sections must be present for this document to be valid.

Safety Data Sheet - Version 5.0

Preparation Date 11/5/2015 Latest Revision Date (If Revised)

SDS Expiry Date 11/3/2018

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

1.1 Product Identifier

Chemical Name 4-Amino-1,5-dimethylpyrazole Dihydrochloride

A607445 Catalogue #

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

+14166659696 between 0800-1700 (GMT-5)

Product Uses To be used only for scientific research and development. Not for use in humans or animals.

1.3 Details of the Supplier of the Safety Data Sheet

| Company | Toronto Research Chemicals 2 Brisbane Road Toronto, ON M3J 2J8 CANADA |
|---------------------------|--|
| Telephone FAX Email | +14166659696 +14166654439 orders@trc-canada.com |
| 1.4 Emergency Tele | - |

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2. HAZARDS IDENTIFICATION

Emergency#

WHMIS Classification (Canada)

None Not WHMIS controlled.

2.1/2.2 Classification of the Substance or Mixture and Label Elements

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200) Not a hazardous substance by GHS.

EU Classification (According to EU Regulation 67/548/EEC)

Not a hazardous substance by this Classification.

EU Risk and Safety Statements (According to EU Regulation 67/548/EEC)

Hazard Codes Hazard Statements

None

Risk Codes and Phrases

None Not a hazardous substance by this Classification.

Safety Precaution Codes and Phrases

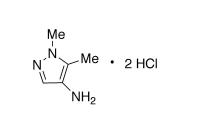
GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Signal Word None

GHS Hazard Statements

None Not a hazardous substance according to GHS.





WHMIS Symbols (Canada)

2.3 Unclassified Hazards/Hazards Not Otherwise Classified

No data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Molecular Formula: C₅H₁₁Cl₂N₃

CAS Registry #: 1189950-55-7

Molecular Weight: 184.07 EC#:

Synonyms

1,5-Dimethyl-1H-pyrazol-4-amine Dihydrochloride; 4-Amino-1,5-dimethyl-1H-pyrazole Dihydrochloride;

3.2 Mixtures

Not a mixture.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

If medical attention is required, show this safety data sheet to the doctor.

If Inhaled

If inhaled, move person to fresh air. If not breathing, give artificial respiration and consult a physician.

In Case of Skin Contact

Wash affected area with soap and water. Consult a physician if any exposure symptoms are observed.

In Case of Eye Contact

Immediately rinse eyes with plenty of water for at least 15 minutes. Consult a physician.

If Swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

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 section 11.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing Media

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

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

Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.2 Special Hazards Arising from the Substance or Mixture

Carbon oxides, Nitrogen oxides, Hydrogen chloride

5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information

No data available.

6. ACCIDENTAL RELEASE MEASURES

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Personal precautions

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

Storage conditions: Refrigerator

7.3 Specific End Uses

For scientific research and development only. Not for use in humans or animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Contains no components with established occupational exposure limits.

8.2 Exposure Controls

Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

Eye/Face Protection

Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "chemical resistant" by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.

Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.

Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material. Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.

Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

Body Protection

Fire resistant (Nomex) coveralls or chemical-resistant bodysuit (laminated Tychem SL or equivalent).

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Respiratory Protection

Recommended respirators are NIOSH-approved N100 or CEN-approved FFP3 particulate respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

| protection, a full-face supplied air respirator mus | |
|---|---|
| 9. PHYSICAL AND CHEMICAL PROPER 9.1 Information on Basic Physical and Chemica | |
| A) Appearance | B) Odour |
| Pale Yellow Solid C) Odour Threshold | No data available D) pH |
| No data available E) Melting Point/Freezing Point 216-218°C | No data available F) Initial Boiling Point/Boiling Range No data available |
| G) Flash point No data available | H) Evaporation Rate No data available |
| I) Flammability (Solid/Gas) No data available K) Vapour Pressure No data available | J) Upper/Lower Flammability/Explosive Limits No data available L) Vapour Density No data available |
| M) Relative Density No data available | N) Solubility DMSO, Methanol |
| O) Partition Coefficient: n-octanol/water No data available | P) Auto-Ignition Temperature No data available |
| Q) Decomposition Temperature No data available | R) Viscosity No data available |
| S) Explosive Properties No data available | T) Oxidizing Properties No data available |
| 9.2 Other Information no data available | |
| 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 No data available. | |
| 10.6 Hazardous Decomposition Products | |
| In the event of fire: See section 5. Other deco | mposition products: No data available. |

11. TOXICOLOGICAL INFORMATION

| 11.1 | Information | on | Toxicological Effects |
|------|-------------|----|-----------------------|
| | | | |

A) Acute Toxicity

Oral LD50: No data available.

Dermal LD50: No data available.

B) Skin Corrosion/Irritation

No data available

C) Serious Eye Damage/Irritation

No data available

D) Respiratory or Skin Sensitization

No data available

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Inhalation LC50: No data available.

E) Germ Cell Mutagenicity No data available F) Carcinogenicity No data available G) Reproductive Toxicity/Teratogenicity No data available H) Single Target Organ Toxicity - Single Exposure No data available I) Single Target Organ Toxicity - Repeated Exposure No data available J) Aspiration Hazard No data available K) Potential Health Effects and Routes of Exposure Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eves May cause eye irritation. L) Signs and Symptoms of Exposure The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11. To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated. **M)** Additional Information RTECS: Not available. **12. ECOLOGICAL INFORMATION** 12.1 Toxicity No data available. 12.2 Persistance and Degradability No data available. **12.3 Bioaccumulative Potential** No data available. 12.4 Mobility in Soil No data available. 12.5 Results of PBT and vPvB Assessment No data available. **12.6 Other Adverse Effects** No data available. **13. DISPOSAL CONSIDERATIONS 13.1 Waste Treatment Methods** A) Product Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed. **B)** Contaminated Packaging Dispose of as above. C) Other Considerations Product is not to be disposed of in sanitary sewers, storm sewers, or landfills. 14. TRANSPORT INFORMATION 14.1 UN Number DOT (US): N/A IATA: N/A IMDG: N/A ADR/RID: N/A 14.2 UN Proper Shipping Name Page 5 Toronto Research Chemicals - A607445 This Safety Data Sheet contains 16 sections. All 16 sections must be present for this document to be valid.

| DOT (US)/IATA: Not dangerous goods. | | | | | |
|--|------------|------------|---------------|--|--|
| IMDG/ARD/RID: | | | | | |
| Not dangerous goods. | | | | | |
| 14.3 Transport Hazard Class(e | es) | | | | |
| DOT (US): N/A | IATA: N/A | IMDG: N/A | ADR/RID: N/A | | |
| 14.4 Packing Group | | | | | |
| DOT (US): N/A | IATA: N/A | IMDG: N/A | ADR/RID: N/A | | |
| 14.5 Environmental Hazards | | | | | |
| DOT (US): None | IATA: None | IMDG: None | ADR/RID: None | | |
| 14.6 Special Precautions for User | | | | | |
| None | | | | | |
| 15. REGULATORY INFOR | MATION | | | | |

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

A) Canada

DSL/NDSL Status: This product is not listed on the Canadian DSL/NDSL.

B) United States

TSCA Status: This product is not listed on the US EPA TSCA.

C) European Union

ECHA Status: This product is not registered with the EU ECHA.

15.2 Chemical Safety Assessment

No data available

16. OTHER INFORMATION

16.1 Revision History

Original Publication Date: 11/5/2015

16.2 List of Abbreviations

- LD50 Median lethal dose of a substance required to kill 50% of a test population.
- LC50 Medial lethal concentration of a substance required to kill 50% of a test population.
- LDLo Lowest known lethal dose
- TDLo Lowest known toxic dose
- IARC International Agency for Research on Cancer
- NTP National Toxicology Program
- RTECS Registry of Toxic Effects of Chemical Substances

16.3 Further Information

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.