

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 09.09.2016

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Adipoyl Chloride, Hexane

SECTION 1: Identification

Product identifier

Product name: Adipoyl Chloride, Hexane

Product code: S25125

Recommended use of the product and restriction on use

Relevant identified uses: Not determined or not applicable.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

United States

AquaPhoenix Scientific

860 Gitts Run Road

Hanover

PA 17331

(717) 632-1291

Supplier:

United States

Fisher Science Education

6771 Silver Crest Road

Nazareth

PA 18064

800 955-1177

Emergency telephone number:

United States

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazard(s) identification

GHS classification:

Flammable liquids, category 2

Serious eye damage, category 1

Aspiration hazard, category 1

Skin irritation, category 2

Reproductive toxicity, category 2

Specific target organ toxicity - single exposure, category 3, central nervous system

Specific target organ toxicity - repeated exposure, category 2

Chronic aquatic hazard, category 2

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H225 Highly flammable liquid and vapor

H318 Causes serious eye damage

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H361 Suspected of damaging fertility or the unborn child

H336 May cause drowsiness or dizziness

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H373 May cause damage to organs through prolonged or repeated exposure

H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

P233 Keep container tightly closed

P240 Ground/bond container and receiving equipment

P241 Use explosion-proof electrical/ventilating/light/equipment

P242 Use only non-sparking tools

P243 Take precautionary measures against static discharge

P280 Wear protective gloves/protective clothing/eye protection/face protection

P264 Wash skin thoroughly after handling

P201 Obtain special instructions before use

P202 Do not handle until all safety precautions have been read and understood

P271 Use only outdoors or in a well-ventilated area

P260 Do not breathe dust/fume/gas/mist/vapors/spray

P273 Avoid release to the environment

P303+P361+P353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower

P370+P378 In case of fire: Use agents recommended in section 5 for extinction

P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

P331 Do not induce vomiting

P301+P310 If swallowed: Immediately call a poison center or doctor/physician

P321 Specific treatment (see supplemental first aid instructions on this label).

P362 Take off contaminated clothing and wash before reuse

P302+P352 If on skin: Wash with soap and water

P332+P313 If skin irritation occurs: Get medical advice/attention

P308+P313 If exposed or concerned: Get medical advice/attention

P304+P340+P312 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell

P391 Collect spillage

P405 Store locked up

P403+P233 Store in a well ventilated place. Keep container tightly closed

P501 Dispose of contents and container as instructed in Section 13

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

| Identification | Name | Weight % |
|-------------------------|--------------------|----------|
| CAS number: 111-50-2 | Adipoyl Dichloride | 4.6 |
| CAS number: 110-54-3 | n-Hexane | 95.4 |

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Not determined or not applicable.

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After inhalation:

Move exposed individual to fresh air
Call a POISON CONTROL CENTER or seek medical attention if you feel unwell

After skin contact:

Wash affected area with soap and water
Seek medical attention if symptoms develop or persist

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes
Remove contact lens(es) if able to do so during rinsing
Immediately call a POISON CONTROL CENTER or seek medical attention

After swallowing:

Rinse mouth thoroughly
Seek medical attention if irritation, discomfort, or vomiting persists

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not applicable.

Delayed symptoms and effects:

Not determined or not applicable.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not applicable.

Notes for the doctor:

Not determined or not applicable.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Use dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors
Vapors can flow to distant ignition sources and flashback
Liquid is volatile and may generate an explosive atmosphere

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing
Refer to Section 8

Special precautions:

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols
Avoid contact with skin, eyes and clothing

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation
Ensure air handling systems are operational
Beware of vapors accumulating to form explosive concentrations
Vapors can accumulate in low areas

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Environmental precautions:

Should not be released into the environment
Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing
Use spark-proof tools and explosion-proof equipment

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.
Avoid breathing mist or vapor.
Use only non-sparking tools.
Take precautionary measures against electrostatic discharges.

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.
Keep container tightly sealed.
Keep away from all ignition sources: open flames, hot surfaces, direct sunlight, spark sources.
Store locked up.
Use appropriate containment to avoid environmental contamination.
Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

| Country (Legal Basis) | Substance | Identifier | Permissible concentration |
|-----------------------|-----------|------------|--------------------------------------|
| ACGIH | n-Hexane | 110-54-3 | ACGIH TLV TWA 50 ppm |
| United States (OSHA) | n-Hexane | 110-54-3 | OSHA PEL TWA 500 ppm |
| | n-Hexane | 110-54-3 | OSHA PEL TWA 1,800 mg/m ³ |
| NIOSH | n-Hexane | 110-54-3 | NIOSH REL TWA 50 ppm |
| | n-Hexane | 110-54-3 | NIOSH REL TWA 180 mg/m ³ |

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.
Use explosion-proof ventilation equipment.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Select glove material impermeable and resistant to the substance.

Respiratory protection:

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When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

| | |
|--|----------------------------------|
| Appearance | Clear, colorless liquid |
| Odor | Characteristic gasoline |
| Odor threshold | Not available |
| pH | Not available |
| Melting point/freezing point | Not available |
| Initial boiling point/range | 63 -68 °C |
| Flash point (closed cup) | -22°C |
| Evaporation rate | 8.10 |
| Flammability (solid, gas) | Flammable |
| Upper flammability/explosive limit | 8% |
| Lower flammability/explosive limit | 1.08% |
| Vapor pressure | 5.6 at 100°F |
| Vapor density | 3.0 |
| Density | Not available |
| Relative density | Not available |
| Solubilities | Not determined or not available. |
| Partition coefficient (n-octanol/water) | Not available |
| Auto/Self-ignition temperature | 240 °C |
| Decomposition temperature | Not available |
| Dynamic viscosity | Not available |
| Kinematic viscosity | Not available |
| Explosive properties | Not determined or not available. |
| Oxidizing properties | Not determined or not available. |

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

Excess heat, ignition source or flames.

Incompatible materials:

None known.

Hazardous decomposition products:

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None known.

None known.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Skin corrosion/irritation

Assessment: Causes skin irritation

Product data: No data available.

Substance data:

| Name | Result |
|--------------------|-------------------------|
| Adipoyl Dichloride | Causes skin irritation |
| n-Hexane | Causes skin irritation. |

Serious eye damage/irritation

Assessment: Causes serious eye damage

Product data: No data available.

Substance data: No data available.

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Suspected of damaging fertility or the unborn child

Product data: No data available.

Substance data:

| Name | Result |
|----------|--|
| n-Hexane | Suspected of damaging fertility or the unborn child. |

Specific target organ toxicity (single exposure)

Assessment: May cause drowsiness or dizziness

Product data: No data available.

Substance data:

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| Name | Result |
|----------|---|
| n-Hexane | Specific Target Organ Toxicity, Single Exposure - May cause drowsiness or dizziness. |
| | Specific Target Organ Toxicity, Repeated Exposure - May cause damage to the nervous system through prolonged or repeated exposure via inhalation. |

Specific target organ toxicity (repeated exposure)

Assessment: May cause damage to organs through prolonged or repeated exposure

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: May be fatal if swallowed and enters airways

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

SECTION 14: Transport information

United States Transportation of dangerous goods (49 CFR DOT)

| | |
|-----------|--------|
| UN number | UN3286 |
|-----------|--------|


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| | |
|--------------------------------------|---|
| UN proper shipping name | FLAMMABLE LIQUIDS, TOXIC, CORROSIVE, N.O.S. (HEXANE, ADIPOYL CHLORIDE) |
| UN transport hazard class(es) | 3 (8) (6.1)  |
| Packing group | II |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

International Maritime Dangerous Goods (IMDG)

| | |
|--------------------------------------|---|
| UN number | UN3286 |
| UN proper shipping name | FLAMMABLE LIQUIDS, TOXIC, CORROSIVE, N.O.S. (HEXANE, ADIPOYL CHLORIDE) |
| UN transport hazard class(es) | 3 (8) (6.1)  |
| Packing group | II |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

| | |
|--------------------------------------|---|
| UN number | UN3286 |
| UN proper shipping name | FLAMMABLE LIQUIDS, TOXIC, CORROSIVE, N.O.S. (HEXANE, ADIPOYL CHLORIDE) |
| UN transport hazard class(es) | 3 (8) (6.1)  |
| Packing group | II |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

| | |
|--|------|
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | |
| Bulk Name | None |
| Ship type | None |
| Pollution category | None |

SECTION 15: Regulatory information

United States regulations

Inventory listing (TSCA):

| | | |
|----------|--------------------|--------|
| 111-50-2 | Adipoyl Dichloride | Listed |
| 110-54-3 | n-Hexane | Listed |

Significant New Use Rule (TSCA Section 5): Not determined.

Export notification under TSCA Section 12(b): Not determined.

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SARA Section 311/312 hazards:

| | | | | |
|-------|---------|------|----------|----------|
| Acute | Chronic | Fire | Pressure | Reactive |
| No | No | No | No | No |

SARA Section 302 extremely hazardous substances: Not determined.

SARA Section 313 toxic chemicals:

| | | |
|----------|----------|--------|
| 110-54-3 | n-Hexane | Listed |
|----------|----------|--------|

CERCLA:

| | | | |
|----------|----------|--------|------|
| 110-54-3 | n-Hexane | Listed | 5000 |
|----------|----------|--------|------|

RCRA: Not determined.

Section 112(r) of the Clean Air Act (CAA): Not determined.

Massachusetts Right to Know:

| | | |
|----------|--------------------|--------|
| 110-54-3 | n-Hexane | Listed |
| 111-50-2 | Adipoyl Dichloride | Listed |

New Jersey Right to Know:

| | | |
|----------|--------------------|------------|
| 110-54-3 | n-Hexane | Listed |
| 111-50-2 | Adipoyl Dichloride | Not Listed |

New York Right to Know:

| | | |
|----------|--------------------|------------|
| 110-54-3 | n-Hexane | Listed |
| 111-50-2 | Adipoyl Dichloride | Not Listed |

Pennsylvania Right to Know:

| | | |
|----------|--------------------|--------|
| 110-54-3 | n-Hexane | Listed |
| 111-50-2 | Adipoyl Dichloride | Listed |

California Proposition 65: Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-3-0

HMIS: 3-3-0

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End of Safety Data Sheet