

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.17.2015

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## Adipoyl Chloride, Hexane

### SECTION 1 : Identification of the substance/mixture and of the supplier

**Product name :** Adipoyl Chloride, Hexane

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25125A

**Recommended uses of the product and uses restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific  
9 Barnhart Drive, Hanover, PA 17331

**Supplier Details:**

Fisher Science Education  
15 Jet View Drive, Rochester, NY 14624

**Emergency telephone number:**

Fisher Science Education Emergency Telephone No.: 800-535-5053

### SECTION 2 : Hazards identification

**Classification of the substance or mixture:**



**Health hazard**

Specific target organ toxicity following repeated exposure, category 2  
Aspiration hazard, category 1  
Reproductive toxicity, category 2



**Irritant**

Skin irritation, category 2  
Specific target organ toxicity following single exposure, category 3



**Environmentally Damaging**

Chronic hazards to the aquatic environment, category 3



**Corrosive**

Serious eye damage, category 1



**Flammable**

Flammable liquids, category 2

STOT SE 3

Eye Damage. 1

Aspiration Tox.1

Flammable Liq. 2

Aquatic Chronic 2

Reproductive 2

Skin Irritation, Category 2

STOT RE 2

**Signal word :**Danger

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#### Hazard statements:

Highly flammable liquid and vapour  
May be fatal if swallowed and enters airways  
Suspected of damaging fertility or the unborn child  
Causes skin irritation  
May cause damage to organs through prolonged or repeated exposure  
May cause drowsiness or dizziness  
Causes serious eye damage  
Toxic to aquatic life with long lasting effects

#### Precautionary statements:

If medical advice is needed, have product container or label at hand  
Keep out of reach of children  
Read label before use  
Wash skin thoroughly after handling  
Avoid release to the environment  
Take precautionary measures against static discharge  
Wash skin thoroughly after handling  
Use only outdoors or in a well-ventilated area  
Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat/sparks/open flames/hot surfaces. No smoking  
Use explosion-proof electrical/ventilating/light/equipment  
Do not breathe dust/fume/gas/mist/vapours/spray  
Wear protective gloves/protective clothing/eye protection/face protection  
Ground/bond container and receiving equipment  
Keep container tightly closed  
Use only non-sparking tools  
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  
Specific treatment (see supplemental first aid instructions on this label)  
Take off contaminated clothing and wash before reuse  
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  
IF exposed or concerned: Get medical advice/attention  
If skin irritation occurs: Get medical advice/attention  
Get Medical advice/attention if you feel unwell  
Do NOT induce vomiting  
In case of fire: Use agents recommended in section 5 for extinction  
IF ON SKIN: Wash with soap and water  
Collect spillage  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Store locked up  
Store in a well ventilated place. Keep cool  
Dispose of contents and container to an approved waste disposal plant

#### Other Non-GHS Classification:

WHMIS

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### NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	3
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

### SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 110-54-3	n-Hexane	95.4 %
CAS 111-50-2	Adipoyl dichloride	4.6 %
Percentages are by weight		

### SECTION 4 : First aid measures

#### Description of first aid measures

**After inhalation:** Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Seek immediate medical advice.

**After skin contact:** Flush the skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

**After eye contact:** Continue rinsing eyes during transport to hospital. Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek immediate medical attention.

**After swallowing:** Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. Seek immediate medical attention. Do not induce vomiting.

#### Most important symptoms and effects, both acute and delayed:

Irritation. Headache. Nausea. Shortness of breath. Drowsiness.; Suspected of damaging fertility.

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#### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

#### SECTION 5 : Firefighting measures

##### Extinguishing media

**Suitable extinguishing agents:** Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

**For safety reasons unsuitable extinguishing agents:**

##### Special hazards arising from the substance or mixture:

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

##### Advice for firefighters:

**Protective equipment:** Wear protective eyewear, gloves, and clothing. Refer to Section 8. Use NIOSH-approved respiratory protection/breathing apparatus.

**Additional information (precautions):** Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing. Flashback along vapor trail may occur.

#### SECTION 6 : Accidental release measures

##### Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

##### Environmental precautions:

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

##### Methods and material for containment and cleaning up:

Soak up with inert absorbent material and dispose of as hazardous waste. Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. Containerize for disposal. Refer to Section 13. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

##### Reference to other sections:

#### SECTION 7 : Handling and storage

##### Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

##### Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials. Keep away from heat, sparks, or flame. Take measures to prevent the accumulation of static charge.

#### SECTION 8 : Exposure controls/personal protection



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<b>Control Parameters:</b>	110-54-3, n-Hexane, NIOSH (TWA) 50 ppm TWA; 180 mg/m <sup>3</sup> TWA 110-54-3, n-Hexane, OSHA (PELs) 500 ppm TWA; 1800 mg/m <sup>3</sup> TWA 110-54-3, n-Hexane, OSHA (STEL) 1000 ppm STEL; 3600 mg/m <sup>3</sup> STEL
<b>Appropriate Engineering controls:</b>	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use in a Chemical Fume Hood. Ensure adequate ventilation to ensure the Lower Explosive Limit (LEL) is not reached.
<b>Respiratory protection:</b>	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. When necessary use NIOSH approved breathing equipment.
<b>Protection of skin:</b>	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
<b>Eye protection:</b>	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
<b>General hygienic measures:</b>	Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

### SECTION 9 : Physical and chemical properties

<b>Appearance (physical state,color):</b>	Clear, colorless liquid	<b>Explosion limit lower:</b> <b>Explosion limit upper:</b>	1.2% (Hexane) 7.7% (Hexane)
<b>Odor:</b>	Gasoline-like	<b>Vapor pressure:</b>	5.6 @ 100F
<b>Odor threshold:</b>	Not Determined	<b>Vapor density:</b>	3.0
<b>pH-value:</b>	Not Determined	<b>Relative density:</b>	Not Determined
<b>Melting/Freezing point:</b>	Not Determined	<b>Solubilities:</b>	Insoluble
<b>Boiling point/Boiling range:</b>	63 - 68 deg C	<b>Partition coefficient (n-octanol/water):</b>	Not Determined
<b>Flash point (closed cup):</b>	-22 C	<b>Auto/Self-ignition temperature:</b>	234.0 °C (453.2 °F) (Hexane)
<b>Evaporation rate:</b>	8.10	<b>Decomposition temperature:</b>	Not Determined
<b>Flammability (solid,gaseous):</b>	Flammable	<b>Viscosity:</b>	a. Kinematic: Not Determined b. Dynamic: Not Determined
<b>Density:</b> Not Determined			

### SECTION 10 : Stability and reactivity

**Reactivity:** Nonreactive under normal conditions.

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**Chemical stability:** Stable under normal conditions.

**Possible hazardous reactions:** Flammable vapor may form explosive mixtures with air.

**Conditions to avoid:** Incompatible materials. Heat, hot surfaces, open flames, and sources of ignition.

**Incompatible materials:** Strong oxidizers, acids, and bases.

**Hazardous decomposition products:** Carbon oxides, Hydrogen chloride gas

#### SECTION 11 : Toxicological information

<b>Acute Toxicity:</b>		
<b>Oral:</b>	LD50 Oral - Rat - 25,000 mg/kg (Hexane)	Rat
<b>Inhalation:</b>	LC50 Inhalation - Rat - 4 h - 48000 ppm (Hexane)	Rat
<b>Chronic Toxicity:</b> No additional information.		
<b>Corrosion Irritation:</b>		
<b>Ocular:</b>	Mild eye irritation (Hexane)	Rabbit
<b>Sensitization:</b>	No additional information.	
<b>Single Target Organ (STOT):</b>	STOT Single Exposure - May cause drowsiness or dizziness (Hexane). STOT Repeated Exposure - Ingestion - May cause damage to organs through prolonged or repeated exposure (Hexane)	
<b>Numerical Measures:</b>	No additional information.	
<b>Carcinogenicity:</b>	No additional information.	
<b>Mutagenicity:</b>	No additional information.	
<b>Reproductive Toxicity:</b>	Suspected of damaging fertility.	

#### SECTION 12 : Ecological information

##### Ecotoxicity

**Acute Toxicity:** 96 Hr LC50 Pimephales promelas: 2.1 - 2.98 mg/L [flow-through]

**Persistence and degradability:** Not Determined

**Bioaccumulative potential:** Not Determined

**Mobility in soil:** Not Determined

**Other adverse effects:** Not Determined

#### SECTION 13 : Disposal considerations

##### Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. 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. Ensure complete and accurate classification.

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### Adipoyl Chloride, Hexane

#### SECTION 14 : Transport information

##### UN-Number

1993

##### UN proper shipping name

FLAMMABLE LIQUID, TOXIC, N.O.S. (HEXANES)

##### Transport hazard class(es)



##### Class:

3 Flammable liquids

##### Packing group:II

##### Environmental hazard:Yes

##### Transport in bulk:

##### Special precautions for user:

#### SECTION 15 : Regulatory information

##### United States (USA)

##### SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire

##### SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed

##### RCRA (hazardous waste code):

None of the ingredients is listed

##### TSCA (Toxic Substances Control Act):

All ingredients are listed.

##### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

110-54-3 Hexane 5000 lbs

##### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients is listed

##### Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

##### Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

##### Chemicals known to cause developmental toxicity:

None of the ingredients is listed

##### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed.

##### Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

##### Canadian NPRI Ingredient Disclosure list (limit 1%):

110-54-3 n-Hexane

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#### SECTION 16 : Other information

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. Note: 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.

#### GHS Full Text Phrases:

#### Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

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