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

Product name: Urethane

Manufacturer/Supplier Trade name: 

Manufacturer/Supplier Article number: S25830

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
Carcinogenicity, category 1B

Hazards Not Otherwise Classified - Combustible Dust
Carcinogenicity - Category 1

Signal word : Danger

Hazard statements:
May cause cancer

Precautionary statements:
If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use
Do not eat, drink or smoke when using this product
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
If exposed or concerned: Get medical advice/attention
Store locked up
Dispose of contents and container as instructed in Section 13

Combustible Dust Hazard: 
May form combustible dust concentrations in air (during processing).

Other Non-GHS Classification:

WHMIS
SECTION 3 : Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredients:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 51-79-6</td>
<td>Urethane</td>
</tr>
</tbody>
</table>

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. Get medical assistance if cough or other symptoms appear.

**After skin contact:** Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

**After eye contact:** 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 medical attention if irritation persists or if concerned.

**After swallowing:** Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:


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 appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam. Use water spray to cool fire-exposed containers cool.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:
Combustion products may include carbon oxides or other toxic vapors. May be ignited by heat, sparks, and flame. Containers may explode when heated.

Advice for firefighters:

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus. Wear chemical protective clothing and positive pressure self-contained breathing apparatus (SCBA).

Additional information (precautions): Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. 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:
Wear protective equipment. Use spark-proof tools and explosion-proof equipment. Ensure that air-handling systems are operational. Ensure adequate ventilation.

Environmental precautions:
Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

Methods and material for containment and cleaning up:
Keep in suitable closed containers for disposal. Wear protective eyeware, gloves, and clothing. Refer to Section 8. Containerize for disposal; keep well sealed and properly labeled - see Section 13. Always obey local regulations. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Evacuate personnel to safe areas.

Reference to other sections:

SECTION 7: Handling and storage

Precautions for safe handling:
Minimize dust generation and accumulation. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities:
Store away from incompatible materials. Protect from freezing and physical damage. Keep away from food and beverages. Keep stored away from ignition sources, heat, sparks, and flames. Store locked up. Provide ventilation for containers. Store in cool, dry conditions in well sealed containers. Store with like hazards.

SECTION 8: Exposure controls/personal protection
Control Parameters: , OSHA PEL TWA (Total Dust) 15 mg/m³ (50 mppcf*) , ACGIH TLV TWA (inhalable particles) 10 mg/m³

Appropriate Engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use under a fume hood.

Respiratory protection: Not required under normal conditions of use. 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.

Protection of skin: 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.

Eye protection: 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.

General hygienic measures: 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. No eating, drinking, smoking in the work area or when handling this material.

### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance (physical state,color):</th>
<th>Colorless Solid</th>
<th>Explosion limit lower:</th>
<th>Not determined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor:</td>
<td>Odorless</td>
<td>Vapor pressure:</td>
<td>10 mm Hg @ 77.8°C</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>Not determined</td>
<td>Vapor density:</td>
<td>3.07</td>
</tr>
<tr>
<td>pH-value:</td>
<td>Aqueous solution is neutral</td>
<td>Relative density:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting/Freezing point:</td>
<td>47-51°C</td>
<td>Solubilities:</td>
<td>Soluble</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>182-184°C</td>
<td>Partition coefficient (n-octanol/water):</td>
<td>log Kow = -0.15</td>
</tr>
</tbody>
</table>
Flash point (closed cup): Not determined
Auto/Self-ignition temperature: Not determined
Evaporation rate: Not determined
Decomposition temperature: Not determined
Flammability (solid, gaseous): Not determined
Viscosity:
  a. Kinematic: Not determined
  b. Dynamic: Not determined
Density: Not determined
Specific Gravity: 1.107

SECTION 10: Stability and reactivity

Reactivity: Nonreactive under normal conditions.
Chemical stability: Stable under normal conditions.
Possible hazardous reactions: None under normal processing. Hot aqueous acids or alkalies decompose urethane to ethanol, carbon dioxide, and ammonia. Reacts with phosphorous pentachloride to form an explosive product.
Conditions to avoid: Incompatible Materials. Incompatible products, excess heat, dust formation, strong oxidants
Incompatible materials: Acids, antipyrine, chloral hydrate, salol, thymol

SECTION 11: Toxicological information

Acute Toxicity:
Oral: 51-79-6
LD50 oral-rat: 1809 mg/kg
Chronic Toxicity: No additional information.
Corrosion Irritation: No additional information.
Sensitization: No additional information.
Single Target Organ (STOT): No additional information.
Numerical Measures: No additional information.
Carcinogenicity:
Possible cancer hazard: Large doses cause bone marrow depression and occasionally focal degeneration in the brain
OSHA: Carcinogen (51-79-6)
IARC: Group 2A (Probably Carcinogenic to Humans) Monograph 96 [2010]; Supplement 7 [1987]; Monograph 7 [1974] (overall evaluation upgraded from 2B to 2A based on mechanistic and other relevant data) Ethyl carbamate
NTP (National Toxicology Program): Report on Carcinogens - Reasonably Anticipated To Be A Human Carcinogen Urethane

Mutagenicity: No additional information.
Reproductive Toxicity: May impair fertility. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

SECTION 12 : Ecological information

Ecotoxicity
Fish (acute 51-79-6): 96 Hr LC50 Pimephales promelas: 4960 - 5540 mg/L [flow-through]
Fish (chronic 51-79-6): EC50 Pimephales promelas (Fathead minnow, mean length 17.8 mm, mean weight 0.073 g; affected fish lost schooling behavior, were hypoactive and underreactive to external stimuli and were darkly colored) 3.77 g/L/96 hr

Persistence and degradability:
Bioaccumulative potential:
Mobility in soil:
Other adverse effects:

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. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). 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. RCRA (40 CFR 261.33 Haz Waste Code): Carbamic acid, ethyl ester waste number U238

SECTION 14 : Transport information

UN-Number
Not Regulated.
UN proper shipping name
Not Regulated.
Transport hazard class(es)
Packing group: Not Regulated
Environmental hazard:
Transport in bulk:
Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)
SARA Section 311/312 (Specific toxic chemical listings):
Chronic
SARA Section 313 (Specific toxic chemical listings):
None of the ingredients is listed
RCRA (hazardous waste code):
51-79-6 Carbamic acid, ethyl ester
Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.24.2014

Urethane

TSCA (Toxic Substances Control Act):
All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):
51-79-6 Carbamic acid, ethyl ester 100 lbs

Proposition 65 (California):

Chemicals known to cause cancer:
51-79-6 Urethane

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:
51-79-6 Urethane

Canada

Canadian Domestic Substances List (DSL):
All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):
51-79-6 Urethane

Canadian NPRI Ingredient Disclosure list (limit 1%):
None of the ingredients is listed

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
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)
PNEC: Predicted No-Effect Concentration (REACH)
CFR: Code of Federal Regulations (USA)
Urethane

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

Effective date: 10.24.2014
Last updated: 03.19.2015