



1H-Pyrrole

Synerzine™ Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 05/22/2015 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Substance
Substance name : 1H-Pyrrole
Chemical name : Pyrrole
CAS-No. : 109-97-7
Product code : (US) R400
Formula : C4H5N
Synonyms : 1-Aza-2,4-cyclopentadiene / Divinylenimine / Imidole / Monopyrrole / Pyrrol / Pyrrole / Azole

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Synerzine
5340 Hwy 42 S
Ellenwood, Georgia 30294 - USA
T 404-524-6744 - F 404-577-1651
info@synerzine.com - www.synerzine.com

1.4. Emergency telephone number

Emergency number : Infotrac 1-800-535-5053 (Contract# 102471) Dial +1-352-323-3500 when outside the US

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

| | | |
|---|------|-----------------------------|
| Flammable liquids Category 3 | H226 | Flammable liquid and vapour |
| Acute toxicity (oral) Category 3 | H301 | Toxic if swallowed |
| Acute toxicity (inhalation) Category 4 | H332 | Harmful if inhaled |
| Acute toxicity (inhalation:vapour) Category 4 | H332 | Harmful if inhaled |
| Serious eye damage/eye irritation Category 1 | H318 | Causes serious eye damage |

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H226 - Flammable liquid and vapour
H301 - Toxic if swallowed
H318 - Causes serious eye damage
H332 - Harmful if inhaled

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking, heat, hot surfaces, open flames, sparks
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing dust, gas, fume, mist, spray, vapors.

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P264 - Wash clothing, face, hands, hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear face protection, eye protection, protective gloves, protective clothing.
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor, a POISON CENTER
P312 - Call a doctor, a POISON CENTER if you feel unwell
P321 - Specific treatment (see first aid measures on this label)
P330 - Rinse mouth.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry sand to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

| Name | Product identifier | % | GHS-US classification |
|----------------------------------|--------------------|-----|---|
| 1H-Pyrrole (Main constituent) | (CAS-No.) 109-97-7 | 100 | Flam. Liq. 3, H226 Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:vapour), H332 Eye Dam. 1, H318 |

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Allow victim to breathe fresh air. Allow the victim to rest. 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. |
| First-aid measures after skin contact | : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. |
| First-aid measures after eye contact | : Rinse eyes with water as a precaution. 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. |
| First-aid measures after ingestion | : Call a poison center/doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. Specific treatment (see First aid measures on this label). |

4.2. Most important symptoms and effects (acute and delayed)

| | |
|---|---|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. Harmful if inhaled. Toxic if swallowed. |
| Symptoms/effects after inhalation | : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. |
| Symptoms/effects after eye contact | : Causes serious eye damage. |
| Symptoms/effects after ingestion | : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. |

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapour.
Explosion hazard : May form flammable/explosive vapor-air mixture.
Reactivity : Flammable liquid and vapour.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing dust, fume, gas, mist, spray, vapors.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof chemical equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from : Heat sources.

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Protective gloves. Wear protective gloves.

Eye protection:

Safety glasses. Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : Colorless to Amber
Odor : Nutty ethereal
Odor threshold : No data available
pH : No data available
Melting point : Not applicable
Freezing point : -23 °C
Boiling point : 129.7 °C
Flash point : 39 °C
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Not applicable. Flammable liquid and vapour.
Vapor pressure : 8.7 hPa @ 20°C
Relative vapor density at 20 °C : 2.32
Relative density : No data available
Specific gravity / density : 0.955 - 0.975 20/20
Molecular mass : 67.09 g/mol
Solubility : Soluble in water and organic solvents.
Water: 60 g/l
Log Pow : 0.75
Auto-ignition temperature : 550 °C
Decomposition temperature : No data available

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| | |
|----------------------|---------------------|
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : 3.1 - 14.8 vol % |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions. Flammable liquid and vapour. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| 1H-Pyrrole (109-97-7) | |
|-----------------------|-----------------------|
| LD50 oral rat | 137 mg/kg |
| ATE US (oral) | 137 mg/kg body weight |
| ATE US (gases) | 4500 ppmV/4h |
| ATE US (vapors) | 11 mg/l/4h |
| ATE US (dust, mist) | 1.5 mg/l/4h |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if inhaled. Toxic if swallowed.

Symptoms/effects after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

1H-Pyrrole (109-97-7)

| | |
|-------------|--|
| LC50 fish 1 | 197 - 224 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
|-------------|--|

12.2. Persistence and degradability

1H-Pyrrole (109-97-7)

| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

12.3. Bioaccumulative potential

1H-Pyrrole (109-97-7)

| | |
|---------------------------|------------------|
| Log Pow | 0.75 |
| Bioaccumulative potential | Not established. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to manufacturer's suggestion for disposal.

Additional information : Flammable vapors may accumulate in the container. Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1992 Flammable liquids, toxic, n.o.s. (1H-Pyrrole), 3, III

UN-No.(DOT) : UN1992

Proper Shipping Name (DOT) : Flammable liquids, toxic, n.o.s.
1H-Pyrrole

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT) : 3 - Flammable liquid
6.1 - Poison



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Symbols : G - Identifies PSN requiring a technical name

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| | |
|--|---|
| DOT Special Provisions (49 CFR 172.102) | : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 150 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 60 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 220 L |
| DOT Vessel Stowage Location | : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel. |
| Other information | : No supplementary information available. |

Transportation of Dangerous Goods

Transport by sea

| | |
|---------------------------------------|---|
| Transport document description (IMDG) | : UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., 3 (6.1), III |
| UN-No. (IMDG) | : 1992 |
| Proper Shipping Name (IMDG) | : FLAMMABLE LIQUID, TOXIC, N.O.S. |
| Class (IMDG) | : 3 - Flammable liquids |
| Packing group (IMDG) | : III - substances presenting low danger |
| Subsidiary risks (IMDG) | : 6.1 - Toxic substances |
| Limited quantities (IMDG) | : 5 L |

Air transport

| | |
|---------------------------------------|---|
| Transport document description (IATA) | : UN 1992 Flammable liquid, toxic, n.o.s., 3 (6.1), III |
| UN-No. (IATA) | : 1992 |
| Proper Shipping Name (IATA) | : Flammable liquid, toxic, n.o.s. |
| Class (IATA) | : 3 - Flammable Liquids |
| Packing group (IATA) | : III - Minor Danger |
| Subsidiary risks (IATA) | : 6.1 - Toxic substances |

SECTION 15: Regulatory information

15.1. US Federal regulations

| | |
|---|---|
| 1H-Pyrrole (109-97-7) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard Fire hazard Immediate (acute) health hazard |

15.2. International regulations

CANADA

| |
|---|
| 1H-Pyrrole (109-97-7) |
| Listed on the Canadian DSL (Domestic Substances List) |

1H-Pyrrole

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

EU-Regulations

1H-Pyrrole (109-97-7)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

1H-Pyrrole (109-97-7)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

1H-Pyrrole (109-97-7)

| | |
|----------------------------|---|
| State or local regulations | U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List |
|----------------------------|---|

SECTION 16: Other information

Other information : None.

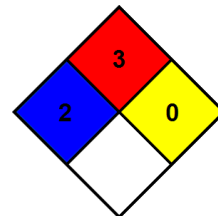
Full text of H-phrases:

| | |
|------|-----------------------------|
| H226 | Flammable liquid and vapour |
| H301 | Toxic if swallowed |
| H318 | Causes serious eye damage |
| H332 | Harmful if inhaled |

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
* - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : G
G - Safety glasses, Gloves, Vapor respirator

Synerzine US

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product