

SAFETY DATA SHEET

Preparation Date: 11/2/2016

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: P1470
Product Name: PYRROLE, REAGENT

Other means of identification

Synonyms: 1-Aza-2,4-cyclopentadiene
 Azole
 Imidole
 Divinylenimine
 Monopyrrole
 Pyrrol
 1H-Pyrrole (9CI)

CAS #: 109-97-7
RTECS # UX9275000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: For manufacturing or laboratory use only.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 3
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Flammable liquids	Category 3

Label elements

Danger

Hazard statements

Toxic if swallowed
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
Flammable liquid and vapor

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Keep container tightly closed

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO₂ to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water

Take off contaminated clothing and wash it before reuse

If skin irritation occurs: Get medical advice/attention

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF SWALLOWED: Rinse mouth.

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Pyrrrole	109-97-7	100

4. FIRST AID MEASURES

First aid measures

- General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.
- Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
- Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately. Toxic if swallowed.

Most important symptoms and effects, both acute and delayed

- Symptoms** Toxic if swallowed. Harmful by inhalation. Causes serious eye irritation. Causes skin irritation. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns.

Indication of any immediate medical attention and special treatment needed

- Notes to Physician:** Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO₂). Water spray, mist, or foam.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Dioxide, Carbon Monoxide. Nitrogen Oxides.

Specific hazards: Flammable
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
Most vapors are heavier than air. They will spread along

the ground and collect in low or confined areas (sewers, basements, tanks)

Special Protective Actions for Firefighters

Specific Methods:

For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:

Remove all sources of ignition. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from sources of ignition - no smoking. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep at temperatures between 2 and 8 °C. Sensitive to light. Store in light-resistant containers. Protect from light. Air sensitive. Hygroscopic. Protect from moisture. Keep refrigerated. Store under inert gas. Flush with nitrogen. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Oxidizing agents
Acid chlorides

Acids
Acid anhydrides

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Pyrrrole	109-97-7	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Pyrrrole	109-97-7	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Pyrrrole	109-97-7	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles or Face-shield
- Skin and body protection:** Gloves. Long sleeved clothing. Chemical resistant apron.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Clear.	Color: Brown.
Odor: Pungent.	Taste No information available.	Formula: C4H5N
Molecular/Formula weight: 67.09	Flammability: Flammable	Flashpoint (°C/°F): 36°C (96.8°F)
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 550°C (1022°F)	Lower Explosion Limit (%): 3.10%
Upper Explosion Limit (%): 14.80%	Melting point/range(°C/°F): -23°C (-9.4°F)	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F):		

Product code: P1470

Product name: PYRROLE, REAGENT

131°C (268°F)

Bulk density:
No information available

Density (g/cm³):
0.967 at 25°C (68°F)

Specific gravity:
No information available

pH:
6 at 10 g/l at 20°C (68°F)

Vapor pressure @ 20°C (kPa):
0.87 kPa at 20°C (68°F)

Evaporation rate:
No information available

Vapor density:
2.31 (Air = 1)

VOC content (g/L):
No information available

Odor threshold (ppm):
48.9 ppm

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in Water

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Chemical stability

Stability: Sensitive to light. Sensitive to air. Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to light. Exposure to air. Exposure to moisture. Heat. Incompatible materials.

Incompatible Materials:
Oxidizing agents
Acid chlorides
Acids
Acid anhydrides

Hazardous decomposition products: Carbon oxides. Nitrogen oxides (NO_x).

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Eyes. Skin. Ingestion. Inhalation.

Acute Toxicity

Component Information

Pyrrole

CAS-No. | 109-97-7

LD₅₀/oral/rat = No information available

LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.
Eye Contact: Causes serious eye irritation.
Inhalation Harmful by inhalation. May cause irritation of respiratory tract.
Ingestion Toxic if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion causes burns of the upper digestive and respiratory tracts.
Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity No information available.
Sensitization: No information available.
Mutagenic Effects: No information available
Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances

Pyrrole	109-97-7	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
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ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Pyrrole - 109-97-7

Freshwater Fish Species Data: 197 - 224 mg/L LC50 Pimephales promelas 96 h flow-through 1

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Pyrrole	109-97-7	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1992
Proper Shipping Name: Flammable liquids, toxic, n.o.s. (pyrrole)
Hazard Class: 3
Subsidiary Class 6.1
Packing group: III

Product code: P1470

Product name: PYRROLE, REAGENT

Emergency Response Guide 131**Number****Marine Pollutant****DOT RQ (lbs):****Special Provisions****Symbol(s):****Description:**

No data available

No information available

B1, IB3, T7, TP1, TP28

No information available

UN1992, Flammable liquids, toxic, n.o.s. (Pyrrole), 3 (6.1), III

TDG (Canada)**UN-No:****Proper Shipping Name:****Hazard Class:****Subsidiary Risk:****Packing Group:****Marine Pollutant****Description:**

UN1992

Flammable liquid, toxic, n.o.s.

3

No information available

III

No Information available

UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

ADR**UN-No:****Proper Shipping Name:****Hazard Class:****Packing Group:****Subsidiary Risk:****Special Provisions****Description:**

UN1992

Flammable liquid, toxic, n.o.s.

3

III

No information available

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UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

IMO / IMDG**UN-No:****Proper Shipping Name:****Hazard Class:****Subsidiary Risk:****Packing Group:****Marine Pollutant****EMS:****Special Provisions****Description**

UN1992

Flammable liquids, toxic, n.o.s. (pyrrole)

3

No information available

III

No information available

F-E

223, 274

UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

RID**UN-No:****Proper Shipping Name:****Hazard Class:****Subsidiary Risk:****Packing Group:****Special Provisions****Description:**

UN1992

Flammable liquid, toxic, n.o.s.

3

No information available

III

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UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

ICAO**UN-No:****Proper Shipping Name:****Hazard Class:****Subsidiary Risk:****Packing Group:****Description:****Special Provisions**

UN1992

Flammable liquid, toxic, n.o.s.

3

No information available

III

UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

A3

IATA**UN-No:****Proper Shipping Name:****Hazard Class:****Subsidiary Risk:**

UN1992

Flammable liquid, toxic, n.o.s.

3

No information available

Packing Group: III
ERG Code: 3P
Special Provisions No information available
Description: UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (Pyrrole), 3 (6.1), III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Pyrrole</i>	109-97-7	Present	Present KE-29973	Present	Present (5)-100	Present	Present	Present 203-724-7

U.S. Regulations

Pyrrole

Massachusetts RTK: Present

Pennsylvania RTK: Present

FDA - 21 CFR - Total Food Additives Present (Not Regulated under 21 CFR)

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Pyrrole</i>	109-97-7	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Pyrrole</i>	109-97-7	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Pyrrole</i>	109-97-7	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

B2 Flammable liquid

D1B Toxic materials

D2B Toxic materials

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Product code: P1470

Product name: PYRROLE, REAGENT

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Pyrrole	109-97-7	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Pyrrole	109-97-7	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Pyrrole	109-97-7	Not listed

EU Classification

R-phrases

R10 - Flammable.
R20 - Harmful by inhalation.
R25 - Toxic if swallowed.
R36/38 - Irritating to eyes and skin.

S-phrases

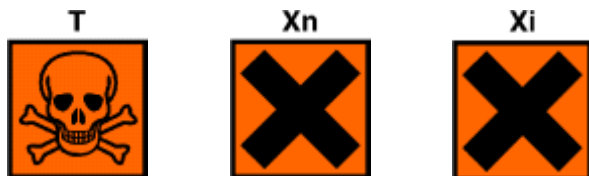
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S46 - If swallowed, seek medical advice immediately and show this container or label.
S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
S63 - In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Pyrrole	109-97-7		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

T - Toxic
Xn - Harmful.
Xi - Irritant.



16. OTHER INFORMATION

Preparation Date: 11/2/2016
Revision Date: Not Applicable
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be

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End of Safety Data Sheet