1. Identification

Product Name

Phenylhydrazine

Cat No.

AC296680000; AC296680025; AC296680050; AC296680250; AC296681000; AC296685000

Synonyms

Hydrazine, phenyl-; Hydrazine-benzene; Hydrazinobenzene

Recommended Use

Laboratory chemicals.

Uses advised against

No Information available

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information US call: 001-800-ACROS-01
Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 /
Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 /
Europe:001-703-527-3887

2. Hazard(s) identification

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

<table>
<thead>
<tr>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
</tr>
<tr>
<td>Skin Corrosion/irritation</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
</tr>
<tr>
<td>Skin Sensitization</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
</tr>
<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
</tr>
<tr>
<td>Target Organs - Respiratory system, Central nervous system (CNS).</td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
</tr>
<tr>
<td>Target Organs - Liver, Kidney, Blood.</td>
</tr>
</tbody>
</table>

Label Elements

Signal Word

Danger

Hazard Statements

Combustible liquid
Toxic if swallowed
Toxic in contact with skin
Phenylhydrazine

Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause respiratory irritation
May cause drowsiness or dizziness
Suspected of causing genetic defects
May cause cancer
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep cool
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Remove/Take off immediately all contaminated clothing
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
Eyes
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
Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>100-63-0</td>
<td>95</td>
</tr>
</tbody>
</table>
4. First-aid measures

**Eye Contact**
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

**Skin Contact**
Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.

**Inhalation**
Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

**Ingestion**
Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects**
Breathing difficulties. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting; Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Notes to Physician**
Treat symptomatically

5. Fire-fighting measures

**Suitable Extinguishing Media**
Water spray. Carbon dioxide (CO\(_2\)). Dry chemical. Use water spray to cool unopened containers. chemical foam.

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
89 °C / 192.2 °F

**Autoignition Temperature**
174 °C / 345.2 °F

**Explosion Limits**
- Upper: No data available
- Lower: No data available

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
Combustible material. In the event of fire, cool tanks with water spray. Containers may explode when heated or if contaminated with water. Contact with metals may evolve flammable gas. Do not allow run-off from fire fighting to enter drains or water courses.

**Hazardous Combustion Products**
Nitrogen oxides (NO\(_x\)) Carbon monoxide (CO) Carbon dioxide (CO\(_2\)) Ammonia Benzene

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Vapors may accumulate in confined areas.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

**Personal Precautions**
Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid contact with skin, eyes and inhalation of vapors. Do not use metal tools or equipment.

**Environmental Precautions**
Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Do not allow material to contaminate ground water system. Prevent spreading of vapors through sewers, ventilation systems and confined areas. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.
Methods for Containment and Clean: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling: Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Handle under inert gas, protect from moisture. Keep away from open flames, hot surfaces and sources of ignition.


8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>TWA: 0.1 ppm</td>
<td>(Vacated) TWA: 5 ppm</td>
<td>IDLH: 15 ppm</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>(Vacated) TWA: 20 mg/m³</td>
<td>Ceiling: 0.14 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 10 ppm</td>
<td>Ceiling: 0.6 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 45 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin TWA: 5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 22 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>TWA: 0.1 ppm</td>
<td>TWA: 5 ppm</td>
<td>TWA: 0.1 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.44 mg/m³</td>
<td>TWA: 20 mg/m³</td>
<td>Skin</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>STEL: 10 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 45 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures: Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark amber</td>
</tr>
<tr>
<td>Odor</td>
<td>aromatic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>19 °C / 66.2 °F</td>
</tr>
</tbody>
</table>
Phenylhydrazine

Boiling Point/Range 238 - 241 °C / 460.4 - 465.8 °F
Flash Point 89 °C / 192.2 °F
Evaporation Rate No information available
Flammability (solid,gas) No information available
Flammability or explosive limits
   Upper No data available
   Lower No data available
Vapor Pressure 0.06 hPa @ 20 °C
Vapor Density 3.7 (Air = 1.0)
Relative Density 1.090
Solubility No information available
Partition coefficient; n-octanol/water No data available
Autoignition Temperature 174 °C / 345.2 °F
Decomposition Temperature 243 °C
Viscosity No information available
Molecular Formula C6 H8 N2
Molecular Weight 108.14

10. Stability and reactivity

Reactive Hazard None known, based on information available
Stability Light sensitive. Air sensitive.
Conditions to Avoid Exposure to air. Exposure to light. Incompatible products.
Incompatible Materials lead oxides, Strong oxidizing agents
Hazardous Decomposition Products Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Ammonia, Benzene
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Component Information</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>188 mg/kg (Rat)</td>
<td>90 mg/kg (Rabbit)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products

No information available

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

Irritation Severe eye irritant Irritating to respiratory system and skin
Sensitization May cause sensitization by skin contact
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>100-63-0</td>
<td>Not listed</td>
<td>Not listed</td>
<td>A3</td>
<td>Not listed</td>
<td>A3</td>
</tr>
</tbody>
</table>

Mutagenic Effects Mutagenic effects have occurred in experimental animals.

Reproductive Effects May cause heritable genetic damage.
Developmental Effects No information available.
Teratogenicity No information available.
Phenylhydrazine

STOT - single exposure
Respiratory system Central nervous system (CNS)
STOT - repeated exposure
Liver Kidney Blood

Aspiration hazard
No information available

Symptoms / effects, both acute and delayed
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:
Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information
No information available

Other Adverse Effects
See actual entry in RTECS for complete information. Carcinogenic effects have been reported in experimental animals.

12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>Not listed</td>
<td>0.16 - 0.25 mg/L LC50 96 h</td>
<td>EC50 = 175.2 mg/L 1 h</td>
<td>2.0 - 5.0 mg/L EC50 24 h</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available

Bioaccumulation/ Accumulation
No information available.

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>1.31</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste Disposal Methods
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 to ensure complete and accurate classification.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2572</td>
<td>PHENYLHYDRAZINE</td>
<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

TDG

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2572</td>
<td>PHENYLHYDRAZINE</td>
<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

IATA

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2572</td>
<td>PHENYLHYDRAZINE</td>
<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

IMDG/IMO

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2572</td>
<td>PHENYLHYDRAZINE</td>
<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

15. Regulatory information

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
</table>

Page 6 / 8
Phenylhydrazine

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>100-63-0</td>
<td>Carcinogen</td>
<td>1.0 µg/day</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

**State Right-to-Know**

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylhydrazine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**U.S. Department of Transportation**

- Reportable Quantity (RQ): N
- DOT Marine Pollutant: N
- DOT Severe Marine Pollutant: N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

- Mexico - Grade: No information available
- Canada: No information available

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**Legend:**

X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

- TSCA 12(b): Not applicable
- SARA 313: Not applicable

**SARA 311/312 Hazardous Categorization**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

**Clean Water Act**: Not applicable

**Clean Air Act**: Not applicable

**OSHA** Occupational Safety and Health Administration

Not applicable

**CERCLA**: Not applicable

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

- Phenylhydrazine: Carcinogen, 1.0 µg/day

**State Right-to-Know**

- Massachusetts: X
- New Jersey: X
- Pennsylvania: X
- Illinois: X
- Rhode Island: X
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

**WHMIS Hazard Class**

- B3  Combustible liquid
- D2A Very toxic materials
- D1A Very toxic materials

---

**16. Other information**

Prepared By  
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date  
03-Dec-2010

Revision Date  
10-Feb-2015

Print Date  
10-Feb-2015

Revision Summary  
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS