SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)

MSDS Number : 000000011657

Product Use Description : Solvent

Manufacturer : Honeywell
1953 South Harvey Street
Muskegon, MI 49442

Manufactured for : VWR International LLC
Radnor Corporate Center
Building One
Suite 200
100 Matsonford Road
Radnor PA 19087

For more information call : (Monday-Friday, 8.00am-5:00pm)
1-800-932-5000

In case of emergency call : (24 hours/day, 7 days/week)
1-800-424-9300(USA Only)
For Transportation Emergencies:
1-800-424-9300 (CHEMTREC - Domestic)
1-613-966-6666 (CANUTEC - Canada)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form : liquid, clear
Color : colourless
Odor : sweet mint-like
Hazard Summary : Extremely flammable. In use, may form flammable/explosive vapour-air mixture. Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if absorbed through skin. Irritating to eyes and respiratory system. May cause...
irritation of the gastrointestinal tract. May irritate skin. The product may be absorbed through the skin.

Potential Health Effects

Skin : May cause skin irritation.
      May cause systemic poisoning with symptoms paralleling those of inhalation.
      Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

Eyes : Irritating to eyes.
       Causes itching, burning, redness and tearing.
       May cause corneal injury.

Ingestion : Aspiration hazard if swallowed - can enter lungs and cause damage.
            May cause irritation of the gastrointestinal tract.
            May cause systemic poisoning with symptoms paralleling those of inhalation.

Inhalation : Causes respiratory tract irritation.
            Causes headache, drowsiness or other effects to the central nervous system.
            Inhalation of high vapour concentrations can cause CNS-depression and narcosis.

Chronic Exposure : Causes headache, drowsiness or other effects to the central nervous system.
                  Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

Aggravated Medical Condition : Skin disorders
                               Eye disorders
                               Cardiac irregularities

Target Organs : Eyes
                Skin
                Respiratory system
                Central nervous system
                Heart

Carcinogenicity
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

- **Inhalation**: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
- **Skin contact**: Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician if irritation develops or persists.
- **Eye contact**: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- **Ingestion**: Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Call a physician.

**Notes to physician**

**Treatment**: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- **Suitable extinguishing media**: Dry chemical Foam Carbon dioxide (CO2) Cool closed containers exposed to fire with water spray.
Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during firefighting: Extremely flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashign back to vapor source. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO2)

Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear personal protective equipment. Unprotected persons must be kept away. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.

Methods for cleaning up: Ventilate the area. No sparking tools should be used. Use explosion-proof equipment. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
SECTION 7. HANDLING AND STORAGE

Handling

Handling: Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Do not smoke.
Do not swallow.
Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion: Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

Requirements for storage areas and containers: Store in area designed for storage of flammable liquids. Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.
Container hazardous when empty.
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures: Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures: Use with local exhaust ventilation.
Prevent vapor buildup by providing adequate ventilation during and after use.

**Eye protection**
- Do not wear contact lenses.
- Wear as appropriate:
  - Safety glasses with side-shields
  - If splashes are likely to occur, wear: Goggles or face shield, giving complete protection to eyes

**Hand protection**
- Solvent-resistant gloves
- Gloves must be inspected prior to use.
- Replace when worn.

**Skin and body protection**
- Wear as appropriate:
  - Solvent-resistant apron
  - Flame retardant antistatic protective clothing
  - If splashes are likely to occur, wear: Protective suit

**Respiratory protection**
- In the case of vapour formation use a respirator with an approved filter.
- For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
- Use NIOSH approved respiratory protection.

**Hygiene measures**
- When using, do not eat, drink or smoke.
- Wash hands and face before breaks and immediately after handling the product.
- Keep working clothes separately.
- Remove and wash contaminated clothing before re-use.
- Do not swallow.
- Avoid breathing vapors, mist or gas.
- Avoid contact with skin, eyes and clothing.

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
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</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>STEL: Short term exposure limit</td>
<td>(750 ppm)</td>
<td>2008</td>
<td>ACGIH:US. ACGIH Threshold Limit Values</td>
</tr>
</tbody>
</table>
# Material Safety Data Sheet

**Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Date</th>
<th>Source</th>
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<tbody>
<tr>
<td>TWA: time weighted average</td>
<td>500 ppm</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
</tr>
<tr>
<td>TWA: time weighted average</td>
<td>200 ppm</td>
<td>12 2010</td>
<td>ACGIHLIS_P:U S. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values</td>
</tr>
<tr>
<td>STEL: Short term exposure limit</td>
<td>500 ppm</td>
<td>12 2010</td>
<td>ACGIHLIS_P:U S. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values</td>
</tr>
<tr>
<td>REL: Recommended exposure limit (REL):</td>
<td>590 mg/m³ (250 ppm)</td>
<td>2005</td>
<td>NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards</td>
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</table>
### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid, clear</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>sweet mint-like</td>
</tr>
<tr>
<td>pH</td>
<td>Note: not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-94.8 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>56 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-4 °F (-20 °C)</td>
</tr>
<tr>
<td>Method</td>
<td>closed cup</td>
</tr>
</tbody>
</table>

PEL: Permissible exposure limit

- **PEL**: 2,400 mg/m³ (1,000 ppm) 02 2006

*OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)*

STEL: Short term exposure limit

- **STEL**: 2,400 mg/m³ (1,000 ppm) 1989

*Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)*

TWA: time weighted average

- **TWA**: 1,800 mg/m³ (750 ppm) 1989

*Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)*

- **PEL**: Permissible exposure limit
- **STEL**: Short term exposure limit
- **TWA**: time weighted average

**Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)**

**000000011657**

**Version 1** | **Revision Date 06/20/2012** | **Print Date 06/20/2012**
---|---|---
**PEL**: Permissible exposure limit | 2,400 mg/m³ (1,000 ppm) | 02 2006 | *OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)*

**STEL**: Short term exposure limit | 2,400 mg/m³ (1,000 ppm) | 1989 | *Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)*

**TWA**: time weighted average | 1,800 mg/m³ (750 ppm) | 1989 | *Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)*
Evaporation rate : 12
   Method: Compared to Butyl acetate.

Lower explosion limit : 2 % (V)
Upper explosion limit : 13 % (V)

Vapour pressure : 240 hPa
   at 20 °C (68 °F)

Vapour density : 2.0
   Note: (Air = 1.0)

Density : 0.79 g/cm³

Water solubility : Note: completely soluble

Partition coefficient:
   n-octanol/water : POW: 0.58 log Pow: -0.24

Ignition temperature : 465 °C

Molecular Weight : 58.05 g/mol

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Heat, flames and sparks.
   Keep away from direct sunlight.

Materials to avoid : Acids
   Aldehydes
   Alkalies
   Amines
   Ammonia
Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)

Oxidizing agents
Reducing agents
Chlorine compounds

Hazardous decomposition products: In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO2)

Hazardous reactions: Hazardous polymerisation does not occur.
Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity: LD50: 5,800 mg/kg
Species: rat

Acute inhalation toxicity: LC50: 32000 ppm
Exposure time: 4 h
Species: rat

Acute dermal toxicity: LD50: > 7,426 mg/kg
Species: guinea pig

Skin irritation: Species: rabbit
Result: Mild skin irritation
Exposure time: 24 h

Eye irritation: Species: rabbit
Result: irritating

Repeated dose toxicity:
Species: rat
NOEL: 19000 ppm
Note: 8-Week Inhalation Toxicity Study 5 days/week for 8 weeks Slightly reduced weight gain compared to controls

Species: rat
NOEL: 100 mg/kg/d
Note: 90-Day Oral Toxicity Study increased liver and kidney
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish
- LC50: 5,540 mg/l
  Exposure time: 96 h
  Species: Oncorhynchus mykiss (rainbow trout)
- LC50: 8,300 mg/l
  Exposure time: 96 h
  Species: Lepomis macrochirus (Bluegill sunfish)

Toxicity to daphnia and other aquatic invertebrates.
- LC50: 10 mg/l
  Exposure time: 24 h
  Species: Daphnia magna (Water flea)

Toxicity to algae
Acetone
- EC50: 3,020 mg/l
  Exposure time: 14 d
  Species: Chlorella pyrenoidosa

Toxicity to bacteria
- LC50: > 1,000 mg/l
  Species: Bacteria

Biodegradability
Acetone
- anaerobic
  Result: Readily biodegradable
  Value: 78 %
  Method: OECD 301 D

Further information on ecology
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

<table>
<thead>
<tr>
<th>UN/ID No.</th>
<th>UN 1090</th>
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<tbody>
<tr>
<td>Proper shipping name</td>
<td>ACETONE</td>
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<tr>
<td>Class</td>
<td>3</td>
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<tr>
<td>Packing group</td>
<td>II</td>
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<td>Hazard Labels</td>
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IATA

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<td>Description of the goods</td>
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<td>Class</td>
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<tr>
<td>Packaging group</td>
<td>II</td>
</tr>
<tr>
<td>Hazard Labels</td>
<td>3</td>
</tr>
<tr>
<td>Packing instruction (cargo aircraft)</td>
<td>364</td>
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<tr>
<td>Packing instruction (passenger aircraft)</td>
<td>353</td>
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<td>Packing instruction (passenger aircraft)</td>
<td>Y341</td>
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IMDG

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<th>UN 1090</th>
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<tr>
<td>Description of the goods</td>
<td>ACETONE</td>
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<tr>
<td>Class</td>
<td>3</td>
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<tr>
<td>Packaging group</td>
<td>II</td>
</tr>
<tr>
<td>Hazard Labels</td>
<td>3</td>
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<tr>
<td>EmS Number</td>
<td>F-E</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>no</td>
</tr>
</tbody>
</table>

SECTION 15. REGULATORY INFORMATION

Inventories

US. Toxic Substances Control Act : On TSCA Inventory
Material Safety Data Sheet

Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Compliance Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Canada</td>
<td>All components of this product are on the Canadian DSL list.</td>
</tr>
<tr>
<td>Japan</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Korea</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>Philippines</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>China</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>New Zealand</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**National regulatory information**

- **US. Drug Enforcement Administration (DEA) Listed Precursor and Essential Chemicals (21 CFR 1310)**: On the United States Drug Enforcement Authority (DEA) List of Precursors and Essential Chemicals
  - **Acetone**: 67-64-1

**SARA 302 Components**: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**: Fire Hazard  
Acute Health Hazard
Material Safety Data Sheet

Acetone (BDH1101-4LG, BDH1101-1LP, BDH1101-4LP, BDH1101-204L, BDH1101-19L)

CERCLA Reportable Quantity : 5000 lbs

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : Acetone 67-64-1
New Jersey RTK : Acetone 67-64-1
Pennsylvania RTK : Acetone 67-64-1

WHMIS Classification : B2: Flammable liquid
                      : D2B: Toxic Material Causing Other Toxic Effects
                      : This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>HMIS III</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard</td>
<td>2*</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
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<td>3</td>
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<tr>
<td>Physical Hazard</td>
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<td></td>
</tr>
<tr>
<td>Instability</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information
The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 06/01/2012
Prepared by: Honeywell Performance Materials and Technologies  Product Stewardship Group