SAFETY DATA SHEET

Methanol
BDH1135

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methanol

MSDS Number : 000000011700

Product Use Description : Solvent

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)
1-613-996-6666 (CANUTEC - Canada)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form : liquid, clear
Color : colourless
Odor : slight alcohol-like
Classifications of the substance or mixture

Classification of the substance or mixture:
- Flammable liquids, Category 2
- Eye irritation, Category 2A
- Reproductive toxicity, Category 2
- Specific target organ toxicity - single exposure, Category 1, Eyes, Nervous system, Systemic toxicity

GHS Label elements, including precautionary statements

Symbol(s):

- Explosive symbol
- Corrosive symbol
- Poison symbol

Signal word: Danger

Hazard statements:
- Highly flammable liquid and vapour.
- Causes serious eye irritation.
- Suspected of damaging fertility or the unborn child.
- Causes damage to organs.

Precautionary statements:

**Prevention:**
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Keep container tightly closed.
- 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 breathe dust/ fume/ gas/ mist/ vapours/ spray.
- Wash skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/ eye protection/ face protection.

**Response:**
- IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed: Call a POISON CENTER or doctor/ physician. If eye irritation persists: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:
Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:
Dispose of contents/container in accordance with local, state & federal regulations.

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>Methanol</td>
<td>67-56-1</td>
<td>100.00 %</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

Inhalation: Call a physician immediately. 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.
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.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

Ingestion : Call a physician immediately. Do NOT induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical
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 : 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)
Formaldehyde

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear personal protective equipment.  
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.  
Do not breathe vapours or spray mist.  
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, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a 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.  
Do not breathe vapours or spray mist.  
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 vapour 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 case of insufficient ventilation, wear suitable respiratory equipment.
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 before breaks and immediately after handling the product.
Keep working clothes separately.
Do not swallow.
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.
This material has an established AIHA ERPG exposure limit.

### 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>Methanol</td>
<td>67-56-1</td>
<td>TWA: time weighted average (200 ppm)</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
<td></td>
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</tbody>
</table>
### Methanol

**BDH1135**  
**Version 1.5**  
**Revision Date 03/26/2015**  
**Print Date 05/08/2015**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS No.</th>
<th>STEL Description</th>
<th>STEL Limit</th>
<th>Year</th>
<th>Source</th>
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<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Short term exposure limit</td>
<td>(250 ppm)</td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
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<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Skin designation: Can be absorbed through the skin.</td>
<td></td>
<td>2008</td>
<td>ACGIH: US. ACGIH Threshold Limit Values</td>
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<td>Methanol</td>
<td>67-56-1</td>
<td>REL: Recommended exposure limit (REL):</td>
<td>260 mg/m³ (200 ppm)</td>
<td>2005</td>
<td>NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards</td>
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<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Skin designation: Can be absorbed through the skin.</td>
<td></td>
<td>2005</td>
<td>NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards</td>
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<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>STEL: Short term exposure limit</td>
<td>325 mg/m³ (250 ppm)</td>
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<td>NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards</td>
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<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>PEL: Permissible exposure limit</td>
<td>260 mg/m³ (200 ppm)</td>
<td>02 2006</td>
<td>OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</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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<tbody>
<tr>
<td>Physical state</td>
<td>liquid, clear</td>
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<tr>
<td>Color</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>slight alcohol-like</td>
</tr>
<tr>
<td>pH</td>
<td>Note: Not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Note: Not applicable</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>64.7 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>52 °F (11 °C)</td>
</tr>
<tr>
<td>Method</td>
<td>closed cup</td>
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</tbody>
</table>

**TWA**: time weighted average

**STEL**: Short term exposure limit

**SKIN_FINAL**: Skin designation (Final Rule Limit applies):

- Can be absorbed through the skin.

**1989 Z1A: US. OSHA Table Z-1-A (29 CFR 1910.1000)**
Evaporation rate : ca. 5
   Method: Compared to Butyl acetate.

Lower explosion limit : 6 %(V)
Upper explosion limit : 36 %(V)

Vapor pressure : 129.32 hPa
   at 20 °C (68 °F)
Vapor density : 1.11 Note: (Air = 1.0)
Density : 0.792 g/cm³ at 20 °C

Water solubility : Note: completely soluble

Ignition temperature : 464 °C
Molecular weight : 34.04 g/mol

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under recommended storage conditions.
Possibility of hazardous reactions : Hazardous polymerisation does not occur.
Conditions to avoid : Heat, flames and sparks.
Keep away from direct sunlight.

Incompatible materials to avoid:
- Strong oxidizing agents
- Aluminium
- Magnesium
- May attack many plastics, rubbers and coatings.

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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity:
- LD50: 5,628 mg/kg
  Species: Rat

Acute inhalation toxicity:
- LC50: 64000 ppm
  Exposure time: 4 h
  Species: Rat

Acute dermal toxicity:
- LD50: 15,800 mg/kg
  Species: Rabbit

Skin irritation:
- Species: Rabbit
  Classification: irritating
  Exposure time: 24 h

Eye irritation:
- Species: rabbit eye
  Classification: irritating

Repeated dose toxicity:
- Species: Rat
  Application Route: Inhalation
Test substance: Methanol
Note: Developmental Toxicity NOAEL (maternal toxicity)
10,000 ppm NOAEL (developmental toxicity) 5,000 ppm
Skeletal and visceral malformations.

Genotoxicity in vitro
Methanol : Note: In vitro tests did not show mutagenic effects

Genotoxicity in vivo
Methanol : Note: In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish : LC50: 29,400 mg/l
Exposure time: 96 h
Species: Fathead minnow

Toxicity to daphnia and other aquatic invertebrates : LC50: 10,000 mg/l
Exposure time: 24 h
Species: Daphnia (water flea)

Toxicity to bacteria : EC50: 43,000 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum

: EC50: 40,000 mg/l
Exposure time: 15 min
Species: Photobacterium phosphoreum

: EC50: 39,000 mg/l
Exposure time: 25 min
Species: Photobacterium phosphoreum

Further information on ecology
Additional ecological information: Accumulation in aquatic organisms is unlikely. The product is readily degradable in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS
Disposal methods: Dispose of contents/container in accordance with local, state, and federal regulations.

SECTION 14. TRANSPORT INFORMATION

**DOT**
- UN/ID No.: UN 1230
- Proper shipping name: METHANOL
- Class: 3
- Packing group: II
- Hazard Labels: 3

**IATA**
- UN/ID No.: UN 1230
- Description of the goods: METHANOL
- Class: 3
- Packaging group: II
- Hazard Labels: 3 (6.1)
- Packing instruction (cargo aircraft): 364
- Packing instruction (passenger aircraft): 352
- Packing instructions (passenger aircraft): Y341

**IMDG**
- UN/ID No.: UN 1230
- Description of the goods: METHANOL
- Class: 3
- Packaging group: II
- Hazard Labels: 3 (6.1)
SECTION 15. REGULATORY INFORMATION

**Inventories**

- **US. Toxic Substances Control Act**: On TSCA Inventory
- **Australia. Industrial Chemical (Notification and Assessment) Act**: On the inventory, or in compliance with the inventory
- **Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)**: All components of this product are on the Canadian DSL.
- **Japan. Kashin-Hou Law List**: On the inventory, or in compliance with the inventory
- **Korea. Toxic Chemical Control Law (TCCL) List**: On the inventory, or in compliance with the inventory
- **Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act**: On the inventory, or in compliance with the inventory
- **China. Inventory of Existing Chemical Substances**: On the inventory, or in compliance with the inventory
- **New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand**: On the inventory, or in compliance with the inventory

**National regulatory information**

- **US. EPA CERCLA**: The following component(s) of this product is/are subject to
Hazardous Substances (40 CFR 302) release reporting under 40 CFR 302 when release exceeds the
Reportable Quantity (RQ):

Reportable quantity: 5000 lbs
: Methanol 67-56-1

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

SARA 313 Components : The following components are subject to reporting levels
established by SARA Title III, Section 313:
: Methanol 67-56-1

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

CERCLA Reportable Quantity : 5000 lbs

California Prop. 65 : WARNING: This product contains a chemical known to the State
of California to cause birth defects or other reproductive harm.
: Methanol 67-56-1

Massachusetts RTK : Methanol 67-56-1
New Jersey RTK : Methanol 67-56-1
Pennsylvania RTK : Methanol 67-56-1

WHMIS Classification : B2: Flammable liquid
D1B: Toxic Material Causing Immediate and Serious Toxic Effects
D2A: Very Toxic Material Causing Other Toxic Effects
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>HMIS III</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard</td>
<td>2*</td>
</tr>
<tr>
<td>Flammability</td>
<td>3</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
</tr>
<tr>
<td>Instability</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 and belief at the date of its publication. 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.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group