

**Reagent Alcohol (BDH1156-1LP, BDH1156-4LP, BDH1156-19L, BDH1156-5GL)**

Version 1

Revision Date 03/27/2009

Print Date 03/27/2009

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Reagent Alcohol (BDH1156-1LP, BDH1156-4LP, BDH1156-19L, BDH1156-5GL)

MSDS Number : 000000011694

Product Use Description : Solvent

Manufacturer : Honeywell
1953 South Harvey Street
Muskegon, MI 49442

Manufactured for : VWR International LLC
1310 Goshen Parkway
West Chester, PA 19380

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 : mild alcoholic

Hazard Summary : Flammable. In use, may form flammable/explosive vapour-air mixture. May be fatal if swallowed. May be fatal if inhaled. May be harmful if absorbed through skin. Irritating to eyes, respiratory system and skin. May cause blindness. The product may be absorbed through the skin. Repeated exposure may cause skin dryness or cracking. This product may cause adverse reproductive effects. Possible risk of harm to the unborn child. Avoid exposure to pregnant women especially. Cannot be made non-poisonous.

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Potential Health Effects

- Skin** : Irritating to skin.
The product may be absorbed through the skin.
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 blindness.
May cause irreversible eye damage.
- Ingestion** : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
May cause systemic poisoning with symptoms paralleling those of inhalation.
May cause blindness if swallowed.
Repeated or prolonged exposure to the substance can produce liver damage.
Repeated or prolonged exposure to the substance can produce kidney damage.
- Inhalation** : Causes respiratory tract irritation.
Causes headache, drowsiness or other effects to the central nervous system.
Vapours may cause drowsiness and dizziness.
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
May cause blindness.
Repeated or prolonged exposure to the substance can produce liver damage.
Repeated or prolonged exposure to the substance can produce kidney damage.
- Chronic Exposure** : Causes damage to the kidneys/liver/eyes/brain/respiratory system/central nervous system through prolonged or repeated exposure.
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
This product may cause adverse reproductive effects.
Possible risk of harm to the unborn child.
- Aggravated Medical Condition** : Liver disorders
Eye disorders
Skin disorders
Neurological disorders



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Kidney disorders
Do not use if pregnant.

Target Organs : Eyes
Skin
Liver
Kidney
Blood
Respiratory system
Central nervous system
Gastrointestinal tract

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

Component	CAS-No.	Weight %
Ethanol	64-17-5	90.00
Methanol	67-56-1	5.00
Propan-2-ol	67-63-0	5.00

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.


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Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : 15 °C (59 °F)
closed cup
The information regarding the flash point is that of the pure substance.
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
Cool closed containers exposed to fire with water spray.
- Extinguishing media which shall not be used for safety reasons : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during fire fighting : 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/flashing 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 fire-fighters : 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.

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- 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.
Discharge into the environment must be avoided.
Do not flush into surface water or sanitary sewer system.
Prevent product from entering drains.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Methods for cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local 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.



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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 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.
Remove and wash contaminated clothing before re-use.
Do not swallow. |


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Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Ethanol	64-17-5	OEL (QUE)	TWA	1,000 ppm	1,880 mg/m ³
		CAD AB OEL	TWA	1,000 ppm	1,880 mg/m ³
		CAD BC OEL	TWA		1,000 ppm
		CAD ON OEL	TWA	1,000 ppm	1,900 mg/m ³
Methanol	67-56-1	CAD AB OEL	TWA	200 ppm	262 mg/m ³
		CAD AB OEL	STEL	250 ppm	328 mg/m ³
		Skin designation: Can be absorbed through the skin.			
		CAD BC OEL	TWA		200 ppm
		CAD BC OEL	STEL		250 ppm
		Skin designation: Can be absorbed through the skin.			
		CAD ON OEL	TWA	200 ppm	260 mg/m ³
		CAD ON OEL	STEL	250 ppm	325 mg/m ³
		Skin designation: Can be absorbed through the skin.			
Isopropanol	67-63-0	CAD AB OEL	TWA	400 ppm	983 mg/m ³
		CAD AB OEL	STEL	500 ppm	1,230 mg/m ³
		CAD BC OEL	TWA		200 ppm
		CAD BC OEL	STEL		400 ppm
		CAD ON OEL	TWA		200 ppm
		CAD ON OEL	STEL		400 ppm
		OEL (QUE)	TWA	400 ppm	983 mg/m ³

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OEL (QUE) STEL 500 ppm 1,230 mg/m³**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: liquid, clear
Color	: colourless
Odor	: mild alcoholic
pH	: not applicable
Melting point/range	: -114.1 °C (-173.4 °F) The information regarding melting point/freezing point are those of the pure substance.
Boiling point/boiling range	: 78.32 °C (172.98 °F) The information regarding the boiling point is that of the pure substance.
Vapor pressure	: 59.5 hPa at 20 °C (68 °F) The information regarding the vapour pressure is that of the solvent.
Relative vapour density	: 1.6 (Air = 1.0)
Density	: 0.78 g/cm ³ The information regarding the density is that of the pure substance.
Water solubility	: completely soluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Materials to avoid	: Strong oxidizing agents Potassium superoxide Bromine Pentafluoride Acetyl bromide


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	Acetyl chloride Platinum Sodium
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) Formaldehyde
Hazardous reactions	: Hazardous polymerisation does not occur. Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50 rat Dose: 7,060 mg/kg Test substance: Ethanol
Acute oral toxicity	: LD50 rat Dose: 5,628 mg/kg Test substance: Methanol
Acute oral toxicity	: LD50 rat Dose: 5,045 mg/kg Test substance: Isopropanol
Acute dermal toxicity	: LD50 rabbit Dose: 15,800 mg/kg Test substance: Methanol
Acute dermal toxicity	: LD50 rabbit Dose: 12,800 mg/kg Test substance: Isopropanol
Acute inhalation toxicity	: LC50 rat Dose: 20000 ppm Exposure time: 10 h Test substance: Ethanol
Acute inhalation toxicity	: LC50 rat Dose: 64000 ppm Exposure time: 4 h Test substance: Methanol
Acute inhalation toxicity	: LC50 rat

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		Dose: 16000 ppm Exposure time: 8 h Test substance: Isopropanol
Skin irritation	:	rabbit irritating Exposure time: 24 h Test substance: Methanol
Skin irritation	:	rabbit Mild skin irritation Test substance: Isopropanol
Eye irritation	:	rabbit eye irritating Test substance: Methanol
Eye irritation	:	rabbit Test substance: Isopropanol Severe eye irritation

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability	:	Biochemical Oxygen Demand (BOD) Biochemical oxygen demand within 5 days Biodegradation: 58 % Test substance: Isopropanol
Toxicity to fish	:	LC50 Species: Fathead minnow Dose: 29.4 g/l Exposure time: 96 h Test substance: Ethanol
Toxicity to fish	:	LC50 Species: goldfish Dose: > 5 g/l Exposure time: 24 h Test substance: Isopropanol
Toxicity to fish	:	LC50 Species: Leuciscus idus (Golden orfe) Dose: 8,970 mg/l Exposure time: 48 h

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		Test substance: Isopropanol
Toxicity to fish	:	LC50 Species: Pimephales promelas (fathead minnow) Dose: 10,400 mg/l Exposure time: 96 h Test substance: Isopropanol
Toxicity to daphnia and other aquatic invertebrates.	:	LC50 Species: Daphnia Dose: 10,000 mg/l Exposure time: 24 h Test substance: Methanol
Toxicity to daphnia and other aquatic invertebrates.	:	EC50 Species: Daphnia magna (Water flea) Dose: > 100 mg/l Exposure time: 48 h Test substance: Isopropanol
Toxicity to algae	:	LC50 Species: Scenedesmus subspicatus Dose: > 2,000 mg/l Exposure time: 72 h Test substance: Isopropanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 43,000 mg/l Exposure time: 5 min Test substance: Methanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 40,000 mg/l Exposure time: 15 min Test substance: Methanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 39,000 mg/l Exposure time: 25 min Test substance: Methanol
Toxicity to bacteria	:	EC50 Species: Photobacterium phosphoreum Dose: 35,390 mg/l Exposure time: 5 min

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Test substance: Isopropanol

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Information: Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

TDG UN-Number : 1987
Proper shipping name : Alcohols, n.o.s.
(ETHANOL, METHANOL
, ISOPROPANOL
)
Class : 3
Packing group : II

IATA UN Number : 1987
Description of the goods : Alcohols, n.o.s.
(Ethanol, Methanol
, Isopropanol
)
Class : 3
Packaging group : II
Hazard Label : 3
Packing instruction (cargo
aircraft) : 307
Packing instruction
(passenger aircraft) : 305
Packing instruction
(passenger aircraft) : Y305

IMDG Substance No. : UN 1987
Description of the goods : Alcohols, n.o.s.
(ETHANOL
, METHANOL
, ISOPROPANOL
)
Class : 3
Packaging group : II
Hazard Label : 3
EmS Number : F-E
Marine pollutant : no

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SECTION 15. REGULATORY INFORMATION**Inventories**

- EU. EINECS : On the inventory, or in compliance with the inventory
- 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). (Can. Gaz. Part II, Vol. 133) : All components of this product are on the Canadian DSL list.
- 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
- CH INV - Switzerland : On the inventory, or in compliance with the inventory
- NZIOC - New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

- WHMIS Classification** : B2
D1B
D2A
D2B
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.



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WHMIS

Components	: Ethanol	64-17-5
	: Methanol	67-56-1
	: Isopropanol	67-63-0

NPRI

Components	: Ethanol	64-17-5
	: Methanol	67-56-1
	: Isopropanol	67-63-0

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health Hazard	: 2*	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

Further information

* - Chronic health hazard