

**Reagent Alcohol Blends (BDH1158-4LP, BDH1158-19L, BDH1160-4LP, BDH1160-19L, BDH1162-4LP, BDH1162-19L, BDH1164-4LP, BDH1164-19L)****00000011701**

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Reagent Alcohol Blends (BDH1158-4LP, BDH1158-19L, BDH1160-4LP, BDH1160-19L, BDH1162-4LP, BDH1162-19L, BDH1164-4LP, BDH1164-19L)

MSDS Number : 00000011701

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 : mild alcohol-like

Hazard Summary : Flammable. In use, may form flammable/explosive vapour-air mixture. May be fatal if swallowed. May be fatal if inhaled. May



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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.

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



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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
 Kidney disorders
 Do not use if pregnant.

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

Carcinogenicity

ACGIH: Ethanol 64-17-5
 A3: Confirmed animal carcinogen

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Chemical Name	CAS-No.	Concentration
Ethanol	64-17-5	60.00 - 85.00 %
Water	7732-18-5	10.00 - 30.00 %
Isopropanol	67-63-0	3.00 - 5.00 %
Methanol	67-56-1	2.00 - 5.00 %

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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/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)

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Formaldehyde

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

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.
Discharge into the environment must be avoided.
Do not flush into surface water or sanitary sewer system.
Prevent product from entering drains.
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 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.



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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



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

Exposure Guidelines

Components	CAS-No	Value	Control parameters	Update	Basis
Ethanol	64-17-5	STEL : Short term exposure limit	(1,000 ppm)	2009	ACGIH:US. ACGIH Threshold Limit Values

		REL : Recommended exposure limit (REL):	1,900 mg/m3 (1,000 ppm)	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		PEL : Permissible exposure limit	1,900 mg/m3 (1,000 ppm)	02 2006	OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
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		TWA : time weighted average	1,900 mg/m3 (1,000 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
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Methanol	67-56-1	SKIN_DES : Skin designation:	Can be absorbed through the skin.	2008	ACGIH:US. ACGIH Threshold Limit Values
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		STEL : Short term exposure limit	(250 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
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		TWA : time weighted average	(200 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
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		STEL : Short term exposure limit	325 mg/m3 (250 ppm)	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		SKIN_DES : Skin designation:	Can be absorbed through the skin.	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		REL : Recommended exposure limit (REL):	260 mg/m3 (200 ppm)	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		PEL : Permissible exposure limit	260 mg/m3 (200 ppm)	02 2006	OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
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		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)
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		STEL : Short term exposure limit	325 mg/m3 (250 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
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		TWA : time weighted average	260 mg/m3 (200 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
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Isopropanol	67-63-0	STEL : Short term exposure limit	(400 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
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		TWA : time weighted average	(200 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
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		STEL : Short term exposure limit	1,225 mg/m3 (500 ppm)	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		REL : Recommended exposure limit (REL):	980 mg/m3 (400 ppm)	2005	NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards
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		PEL : Permissible exposure limit	980 mg/m3 (400 ppm)	02 2006	OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
--	--	-------------------------------------	------------------------	---------	---

		STEL : Short term exposure limit	1,225 mg/m3 (500 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
--	--	----------------------------------	--------------------------	------	--

		TWA : time weighted average	980 mg/m3 (400 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid, clear
 Colour : colourless
 Odour : mild alcohol-like
 pH : Note: not applicable

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Melting point/freezing point	: -114.1 °C Note: The physical data is that of the main component.
Boiling point/boiling range	: 78.32 °C Note: The physical data is that of the main component.
Flash point	: 59 °F (15 °C) Method: closed cup Note: The physical data is that of the main component.
Evaporation rate	: ca. 3 Method: Compared to Butyl acetate.
Lower explosion limit	: 3 %(V) Note: The physical data is that of the main component.
Upper explosion limit	: 19 %(V) Note: The physical data is that of the main component.
Vapour pressure	: 59.5 hPa at 20 °C(68 °F) Note: The physical data is that of the main component.
Vapour density	: 1.6 Note: (Air = 1.0), The physical data is that of the main component.
Density	: 0.7890 g/cm ³ at 20 °C 0.7847 g/cm ³ at 25 °C
Water solubility	: Note: completely soluble

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Ignition temperature : Note: not determined

SECTION 10. STABILITY AND REACTIVITYConditions to avoid : Heat, flames and sparks.
Keep away from direct sunlight.Materials to avoid : Strong oxidizing agents
Potassium superoxide
Bromine Pentafluoride
Acetyl bromide
Acetyl chloride
Platinum
SodiumHazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
FormaldehydeHazardous reactions : Hazardous polymerisation does not occur.
Stable under recommended storage conditions.**SECTION 11. TOXICOLOGICAL INFORMATION**Acute oral toxicity : LD50: 7,060 mg/kg
Species: rat
Test substance: Ethanol

: LD50: 5,628 mg/kg
Species: rat
Test substance: Methanol

: LD50: 5,045 mg/kg
Species: rat
Test substance: Isopropanol

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- Acute inhalation toxicity : LC50: 20000 ppm
Exposure time: 10 h
Species: rat
Test substance: Ethanol
- : LC50: 64000 ppm
Exposure time: 4 h
Species: rat
Test substance: Methanol
- : LC50: 16000 ppm
Exposure time: 8 h
Species: rat
Test substance: Isopropanol
- Acute dermal toxicity : LD50: 15,800 mg/kg
Species: rabbit
Test substance: Methanol
- : LD50: 12,800 mg/kg
Species: rabbit
Test substance: Isopropanol
- Skin irritation : Species: rabbit
Result: irritating
Exposure time: 24 h
Test substance: Ethanol
- : Species: rabbit
Result: irritating
Exposure time: 24 h
Test substance: Methanol
- : Species: rabbit
Result: Mild skin irritation
Test substance: Isopropanol
- Eye irritation : Species: rabbit
Result: irritating
Test substance: Ethanol
- : Species: rabbit



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	Result: irritating Test substance: Methanol
	: Species: rabbit Result: Severe eye irritation Test substance: Isopropanol
Repeated dose toxicity Methanol	: Species: rat Application Route: Inhalation Test substance: Methanol Developmental Toxicity NOAEL (maternal toxicity) 10,000 ppm NOAEL (developmental toxicity) 5,000 ppm Skeletal and visceral malformations.
Methanol	: Species: rat Application Route: Inhalation Test substance: Methanol 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
Methanol	: Note: In vitro tests did not show mutagenic effects
Genotoxicity in vivo Methanol	: Note: In vivo tests did not show mutagenic effects
Methanol	: Note: In vivo tests did not show mutagenic effects
Further information	: Note: Confirmed animal carcinogen with unknown relevance to humans.

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

- Toxicity to fish
- : LC0: 8,140 mg/l
Exposure time: 48 h
Species: Leuciscus idus (Golden orfe)
Test substance: Ethanol

 - : flow-through test
LC50: 12,900 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Test substance: Ethanol

 - : LC50: 14,200 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
Test substance: Ethanol

 - : LC50: 29,400 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
Test substance: Methanol

 - : LC50: > 5,000 mg/l
Exposure time: 24 h
Species: Carassius auratus (goldfish)
Test substance: Isopropanol

 - : LC50: 8,970 mg/l
Exposure time: 48 h
Species: Leuciscus idus (Golden orfe)
Test substance: Isopropanol

 - : LC50: 10,400 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
Test substance: Isopropanol
- Toxicity to daphnia and other aquatic invertebrates. : EC50: 9,268 mg/l
Exposure time: 48 h



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	Species: <i>Daphnia magna</i> (Water flea) Test substance: Ethanol
	: EC50: 10,800 mg/l Exposure time: 24 h Species: <i>Daphnia magna</i> (Water flea) Test substance: Ethanol
	: LC50: 10,000 mg/l Exposure time: 24 h Species: <i>Daphnia</i> Test substance: Methanol
	: EC50: > 100 mg/l Exposure time: 48 h Species: <i>Daphnia magna</i> (Water flea) Test substance: Isopropanol
Toxicity to algae	: LC0: 5,000 mg/l Species: <i>Scenedesmus quadricauda</i> Test substance: Ethanol
	: LC50: > 2,000 mg/l Exposure time: 72 h Species: <i>Desmodesmus subspicatus</i> (green algae) Test substance: Isopropanol
Toxicity to bacteria	: LC0: 6,500 mg/l Species: <i>Pseudomonas putida</i> Test substance: Ethanol
	: EC50: 35,470 mg/l Exposure time: 5 min Species: <i>Photobacterium phosphoreum</i> Test substance: Ethanol
	: EC50: 34,634 mg/l Exposure time: 30 min Species: <i>Photobacterium phosphoreum</i> Test substance: Ethanol
	: EC50: 43,000 mg/l Exposure time: 5 min Species: <i>Photobacterium phosphoreum</i>



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Test substance: Methanol

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

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

: EC50: 35,390 mg/l
 Exposure time: 5 min
 Species: Photobacterium phosphoreum
 Test substance: Isopropanol

Elimination information (persistence and degradability)

Biodegradability : Biochemical Oxygen Demand (BOD)
 Biochemical oxygen demand within 5 days
 Value: 58 %
 Test substance: Isopropanol

Further information on ecology

SECTION 13. DISPOSAL CONSIDERATIONS

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

SECTION 14. TRANSPORT INFORMATION

DOT	UN/ID No.	: UN 1987
	Proper shipping name	: ALCOHOLS, N.O.S. (Ethanol, Methanol, Isopropanol)
	Class	3
	Packing group	II
	Hazard Labels	3



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IATA	UN/ID No.	: UN 1987
	Description of the goods	: ALCOHOLS, N.O.S. (Ethanol, Methanol, Isopropanol)
	Class	: 3
	Packaging group	: II
	Hazard Labels	: 3
	Packing instruction (cargo aircraft)	: 364
	Packing instruction (passenger aircraft)	: 353
	Packing instruction (passenger aircraft)	: Y341
IMDG	UN/ID No.	: UN 1987
	Description of the goods	: ALCOHOLS, N.O.S. (ETHANOL, METHANOL, ISOPROPANOL)
	Class	: 3
	Packaging group	: II
	Hazard Labels	: 3
	EmS Number	: F-E
	Marine pollutant	: no

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 list.
Japan. Kashin-Hou Law List	: On the inventory, or in compliance with the inventory
Korea. Existing Chemicals Inventory (KECI)	: On the inventory, or in compliance with the inventory
Philippines. The Toxic	: On the inventory, or in compliance with the inventory



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Substances and Hazardous and Nuclear Waste Control Act

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

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 : The following components are subject to reporting levels established by SARA Title III, Section 313:
 : Methanol 67-56-1
 : Isopropanol 67-63-0

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

CERCLA Reportable Quantity : 100000 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 : Ethanol 64-17-5
 : Methanol 67-56-1
 : Isopropanol 67-63-0



Reagent Alcohol Blends (BDH1158-4LP, BDH1158-19L, BDH1160-4LP, BDH1160-19L, BDH1162-4LP, BDH1162-19L, BDH1164-4LP, BDH1164-19L)

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New Jersey RTK	: Ethanol : Water : Methanol : Isopropanol	64-17-5 7732-18-5 67-56-1 67-63-0
Pennsylvania RTK	: Ethanol : Water : Methanol : Isopropanol	64-17-5 7732-18-5 67-56-1 67-63-0
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

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

* - 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.



Reagent Alcohol Blends (BDH1158-4LP, BDH1158-19L, BDH1160-4LP, BDH1160-19L, BDH1162-4LP, BDH1162-19L, BDH1164-4LP, BDH1164-19L)

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Revision Date 06/20/2012

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

Previous Issue Date: 06/20/2012

Prepared by: Honeywell Performance Materials and Technologies Product Stewardship Group