SECTION 1: Identification

1.1. Identification
Product form : Mixtures
Product name : Potassium Hydroxide, 0.5N (0.5M) in Methanol
Product code : LC19520

1.2. Recommended use and restrictions on use
Use of the substance/mixture : For laboratory and manufacturing use only.
Recommended use : Laboratory chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier
LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number
Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS-US classification
Flammable liquids H225 Highly flammable liquid and vapour
Category 2
Acute toxicity (oral) H301 Toxic if swallowed
Category 3
Acute toxicity (dermal) H311 Toxic in contact with skin
Category 3
Acute toxicity (inhalation) H331 Toxic if inhaled
Category 3
Acute toxicity (inhalation:dust,mist) H331 Toxic if inhaled
Category 3
Skin corrosion/irritation H314 Causes severe skin burns and eye damage
Category 1B
Serious eye damage/eye irritation Category 1 H318 Causes serious eye damage
Specific target organ toxicity (single exposure) Category 1 H370 Causes damage to organs (central nervous system, optic nerve, liver, kidneys) (Dermal, oral)

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements
GHS-US labeling
Hazard pictograms (GHS-US) :

GHS02  GHS05  GHS06  GHS08

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapour
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H314 - Causes severe skin burns and eye damage
H370 - Causes damage to organs (central nervous system, optic nerve, liver, kidneys) (Dermal, oral)
Precautionary statements (GHS-US) : P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
Potassium Hydroxide, 0.5N (0.5M) in Methanol
Safety Data Sheet

P241 - Use explosion-proof electrical, ventilating, lighting equipment
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe mist, vapors, spray.
P264 - Wash exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use carbon dioxide (CO2), powder, alcohol-resistant foam to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards which do not result in classification
Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>(CAS-No.) 67-56-1</td>
<td>97.25</td>
<td>Flam. Liq. 2, H225, Acute Tox. 3 (Oral), H301, Acute Tox. 3 (Dermal), H311, Acute Tox. 3 (Inhalation), H331, STOT SE 1, H370</td>
</tr>
<tr>
<td>Potassium Hydroxide</td>
<td>(CAS-No.) 1310-58-3</td>
<td>2.75</td>
<td>Acute Tox. 4 (Oral), H302, Skin Corr. 1A, H314, Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a POISON CENTER or doctor/physician.
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes severe skin burns and eye damage. Causes damage to organs (optic nerve, central nervous system, kidneys, liver) (Dermal).
Symptoms/effects after inhalation : May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

**4.3. Immediate medical attention and special treatment, if necessary**

Obtain medical assistance.

**SECTION 5: Fire-fighting measures**

**5.1. Suitable (and unsuitable) extinguishing media**

- Unsuitable extinguishing media: Do not use a heavy water stream.

**5.2. Specific hazards arising from the chemical**

- Fire hazard: Highly flammable liquid and vapor.
- Explosion hazard: May form flammable/explosive vapor-air mixture.
- Reactivity: Thermal decomposition generates: Corrosive vapors.

**5.3. Special protective equipment and precautions for fire-fighters**

- Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**

- Emergency procedures: Evacuate unnecessary personnel.

**6.1.2. For emergency responders**

- Protective equipment: Equip cleanup crew with proper protection. Avoid breathing mist, spray.
- Emergency procedures: Ventilate area.

**6.2. Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

**6.3. Methods and material for containment and cleaning up**

Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

**6.4. Reference to other sections**

See Heading 8. Exposure controls and personal protection.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

- Additional hazards when processed: Handle empty containers with care because residual vapors are flammable.
- Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No naked lights. No smoking. Use only non-sparking tools. Do not breathe mist, vapors, spray.
- Hygiene measures: Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

**7.2. Conditions for safe storage, including any incompatibilities**

- Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/… equipment. Comply with applicable regulations.
- Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Heat sources, incompatible materials. Keep in fireproof place. Keep container tightly closed.
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>Potassium Hydroxide (1310-58-3)</th>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH ACGIH Ceiling (mg/m³)</td>
<td>2 mg/m³ (Potassium hydroxide; USA; Momentary value; TLV - Adopted Value)</td>
<td></td>
</tr>
<tr>
<td>NIOSH NIOSH REL (ceiling) (ppm)</td>
<td>2 ppm</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Keep concentrations well below lower explosion limits.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Hand protection:
Wear protective gloves.

Eye protection:
Chemical goggles or face shield

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Gas mask

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colourless to light yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol odour characteristic</td>
</tr>
</tbody>
</table>
Potassium Hydroxide, 0.5N (0.5M) in Methanol
Safety Data Sheet

Odor threshold : No data available
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : 11 °C
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Highly flammable liquid and vapor.
Vapor pressure : No data available
Relative vapor density at 20 °C : 1.11
Relative density : No data available
Specific gravity / density : 0.8
Solubility : Miscible with water. Soluble in ethanol.
Log Pow : No data available
Auto-ignition temperature : 445 °C
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : 6 - 31 vol %
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability
Not established. Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

<table>
<thead>
<tr>
<th>Potassium Hydroxide, 0.5N (0.5M) in Methanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
</tr>
<tr>
<td>ATE US (gases)</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
</tr>
<tr>
<td>Potassium Hydroxide (1310-58-3)</td>
</tr>
<tr>
<td>LD50 oral rat</td>
</tr>
</tbody>
</table>
Potassium Hydroxide, 0.5N (0.5M) in Methanol
Safety Data Sheet

Potassium Hydroxide (1310-58-3)
ATE US (oral) 333 mg/kg body weight

Methanol (67-56-1)
LD50 oral rat > 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit 15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l) 85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm) 64000 ppm/4h (Rat; Literature study)

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Based on available data, the classification criteria are not met
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure: Causes damage to organs (central nervous system, optic nerve, liver, kidneys) (Dermal, oral).
Specific target organ toxicity – repeated exposure: Not classified
Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms:
Symptoms/effects after inhalation: May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/effects after skin contact: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Potassium Hydroxide (1310-58-3)
LC50 fish 2 80 mg/l (LC50; 96 h; Gambusia affinis; Static system; Fresh water)

Methanol (67-56-1)
LC50 fish 1 15400 mg/l (LC50; EPA 660/3-75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1 > 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2 10800 mg/l (LC50; 96 h; Salmo gairdneri)

12.2. Persistence and degradability

Potassium Hydroxide, 0.5N (0.5M) in Methanol
Persistence and degradability: Not established.

Potassium Hydroxide (1310-58-3)
Persistence and degradability: Biodegradability: not applicable.
Biochemical oxygen demand (BOD): Not applicable
Chemical oxygen demand (COD): Not applicable
ThOD: Not applicable

Methanol (67-56-1)
Potassium Hydroxide, 0.5N (0.5M) in Methanol
Safety Data Sheet

Biochemical oxygen demand (BOD) 0.6 - 1.12 g O₂/g substance
Chemical oxygen demand (COD) 1.42 g O₂/g substance
ThOD 1.5 g O₂/g substance
BOD (% of ThOD) 0.8 (Literature study)

12.3. Bioaccumulative potential

Potassium Hydroxide, 0.5N (0.5M) in Methanol
Bioaccumulative potential Not established.

Potassium Hydroxide (1310-58-3)
Bioaccumulative potential Bioaccumulation: not applicable.

Methanol (67-56-1)
BCF fish 1 < 10 (BCF; 72 h; Leuciscus idus)
Log Pow -0.77 (Experimental value; Other)
Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Methanol (67-56-1)
Surface tension 0.023 N/m (20 °C)
Log Koc Koc,PCKOCWIN v1.66; 1; Calculated value

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Additional information : Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Transport document description : UN2924 Flammable liquids, corrosive, n.o.s., 3, II
UN-No.(DOT) : UN2924
Proper Shipping Name (DOT) : Flammable liquids, corrosive, n.o.s.
Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : II - Medium Danger
Hazard labels (DOT) : 3 - Flammable liquid 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Symbols : G - Identifies PSN requiring a technical name
Potassium Hydroxide, 0.5N (0.5M) in Methanol

DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

T11 - 6 178.274(d)(2) Normal............. 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 5 L

DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”
Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Potassium Hydroxide, 0.5N (0.5M) in Methanol

SARA Section 311/312 Hazard Classes
Fire hazard Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Methanol CAS-No. 67-56-1 97.25%

Potassium Hydroxide (1310-58-3)
RQ (Reportable quantity, section 304 of EPA’s List of Lists) 1000 lb
SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

Methanol (67-56-1)
RQ (Reportable quantity, section 304 of EPA’s List of Lists) 5000 lb
SARA Section 311/312 Hazard Classes Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Acute toxicity (any route of exposure) Health hazard - Specific target organ toxicity (single or repeated exposure)

15.2. International regulations

CANADA
No additional information available

Methanol (67-56-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available
Potassium Hydroxide, 0.5N (0.5M) in Methanol
Safety Data Sheet

National regulations
No additional information available

15.3. US State regulations
This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Methanol (67-56-1)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SECTION 16: Other information
Revision date : 02/08/2018
Other information : None.

Full text of H-phrases: see section 16:

- **H225** Highly flammable liquid and vapour
- **H301** Toxic if swallowed
- **H302** Harmful if swallowed
- **H311** Toxic in contact with skin
- **H314** Causes severe skin burns and eye damage
- **H318** Causes serious eye damage
- **H331** Toxic if inhaled
- **H370** Causes damage to organs
- **H402** Harmful to aquatic life

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection : H
  H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US LabChem

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