1.1 Product identifier
Product name: Methanol
Product codes(s): Methanol
Synonym(s): Alcohol, Methyl Hydroxide, Methyl Hydrate, Wood Alcohol, Wood Spirit
REACH Registration Number: This product has been registered according to Regulation (EC) 1907/2006.

1.2 Relevant identified uses of the substance or mixture and uses advised against
General use: Solvent, fuel, feedstock
Uses advised against: No uses advised against

1.3 Details of the supplier and of the safety data sheet
Manufacturer/Distributor
Methanol Holdings (Trinidad) Limited
Atlantic Avenue, Point Lisas Industrial Estate
Point Lisas, Trinidad, West Indies
+1-868-636-2906/9

Non-Emergency Contact
North America: Southern Chemical Corporation +1-281-799-4416
Europe: Helm AG 011-19-40-23750
Trinidad: Methanol Holdings (Trinidad) Limited +1-868-636-2906

1.4 Emergency telephone number
North America Chemtrec: +1-800-424-9300
Europe Giftinformationszentrum Nord: 011-49-551-19240
Trinidad Industrial Plant Services Limited: +1-868-636-1251

2.1 Classification of substance or mixture
Product definition: Substance
Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation (EC) No 1272/2008
Flammable liquid, Category 2 [H225]
Acute Toxicity, Category 3 [H301]
Acute Toxicity, Category 3 [311]
Acute Toxicity, Category 3 [H331]
Specific target organ toxicity, Single exposure, Category 1 (STOT SE 3) [H370]

2.2 Label Elements

Signal Word:
Danger

Hazard Symbol(s):
GHS02  GHS06  GHS08

Hazard Statement(s):
H225 - Highly flammable liquid and vapor
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H331 - Toxic if inhaled
H370 - Causes damage to organs: eyes, skin, respiratory system, central nervous system, gastrointestinal tract

Precautionary Statements:
[Prevention]
P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond containers and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, lighting and mixing equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe fumes, mists, vapors and spray.
P280 - Wear protective gloves, protective clothing, eye protection and face protection.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.

[Response]
P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.
P303 + P361 + P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or shower.
P363 - Wash contaminated clothing before reuse.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330 - Rinse mouth with water.
P321 - Specific treatment: Refer to product label and Section 4. Contact a POISON CENTER or doctor.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing.
SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>% by Weight</th>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Index Number</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;99</td>
<td>Methanol</td>
<td>67-56-1</td>
<td>200-659-6</td>
<td>603-001-00-X</td>
<td>H225, H301, H311, H331, H370</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

**Inhalation:** If product vapor or fumes causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention.

**Eyes:** Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting upper and lower lids. Remove contact lenses, if present after the first 2 minutes and continue rinsing. Obtain immediate medical attention, preferably from an ophthalmologist.

**Skin:** Flush skin with large amounts of water while removing contaminated clothing, and continue rinsing for at least 15 minutes. Wash affected area with soap and water. Wash contaminated clothing and shoes thoroughly before reuse. If irritation persists, seek prompt medical attention.

**Ingestion:** Ingestion of methanol is potentially life threatening. Onset of symptoms may be delayed for 18 to 24 hours after digestion. Rinse mouth with water if the victim is conscious. Remove dentures, if present. Do not induce vomiting unless directed to do so by medical personnel. Give 2 to 3 cupfuls of milk or water to drink if the victim is conscious, alert and able to swallow. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

**Potential health symptoms and effects**

**Eyes:** Causes eye irritation characterized by redness, burning sensation, tearing, swelling and inflammation. May cause corneal injury and painful sensitization to light. Continued exposure may cause lesions. Vapors and fumes can cause eye irritation.

**Skin:** May cause skin irritation. Methanol is a defatting agent. Repeated or prolonged exposure may cause drying and cracking of skin. Absorption through the skin can be toxic. Symptoms may be similar to inhalation exposure.

**Inhalation:** Irritating to mucous membranes and to the respiratory system. Causes central nervous system depression and particularly affects the optic nerve. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, narcosis, coma and death.

**Ingestion:** Ingestion of 100 - 125 ml (~3 to 4 oz.) can be fatal or cause serious, irreversible injury such as blindness. Symptoms are similar to those for inhalation, but may be more severe and speed of appearance may be greater. May cause central nervous system depression, characterized by excitement, followed by headache dizziness, drowsiness and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

**Chronic:** Prolonged or repeated contact with skin may defat tissue causing dermatitis or aggravate existing skin problems. Pre-existing skin, eye and respiratory disorders may be aggravated by exposure to this product. Impaired kidney, liver and central nervous system functions from pre-existing disorders may be aggravated by exposure to this product. Chronic exposures to methanol may cause reproductive disorders and teratogenic effects. Refer to Section 11.2.

4.3 Indication of any immediate medical attention and special treatment needed

**Advice to Doctor and Hospital Personnel:** Effects may be delayed. Ethanol may inhibit methanol metabolism.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

**Suitable methods of extinction:** Use media such as water fog, foam, dry chemical or carbon dioxide.

**Unsuitable methods of extinction:** Methanol will float on water. As a result water using water jets or streams may spread the fire.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapor. Methanol burns with a clean, clear flame that is almost invisible in daylight. Vapors may form an explosive mixture with air. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Exposure to ignition sources such as heat, sparks, flames or electronic devices (e.g. cell phones) can ignite vapors, causing a flash fire. Containers may explode if exposed to fire or heat. During a fire irritating and highly toxic gases may be generated by thermal decomposition or combustion. Symptoms of overexposure to these gases may not be apparent. Seek medical advice.

**Explosion hazards:** Vapor forms an explosive mixture with air.
5.3 Advice for firefighters
Responders should stay upwind. Full protective equipment including self-contained breathing apparatus should be used (HAZMAT suits) if there is liquid methanol or if vapor levels are above the threshold limit value (TLV). Water may be used to cool closed containers to prevent pressure build up and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff water to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing designated in Section 8. Ventilate the area. Remove all sources of ignition. No smoking. Evacuate non-essential personnel from the hazard area.

6.2 Environmental precautions
Do not flush to sewer. Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up
Approach spill from upwind direction. Cover drains and contain spill. Recover liquid where possible, or dilute with water or use alcohol-resistant material restrictions (Sections 7.2 and 10.5). Clean contaminated area with soap and water.

US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

6.4 Reference to other sections
For indications about waste treatment, see Section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling
Wear all appropriate protective equipment specified in Section 8. Keep away from sources of ignition. NO SMOKING. Do not get in eyes or on skin or clothing. Do not breathe vapor or fumes. Wash hands thoroughly after handling. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator.

Advice on protection against fire and explosion
Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use non-sparking type tools and equipment, including explosion proof ventilation.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, dry, well-ventilated storage areas in closed containers. Keep away from oxidizers, acids and bases. Transfer to approved containers having correct labeling. DO NOT store in aluminum or lead containers. (Anhydrous methanol is non-corrosive to most metals at ambient temperatures except lead and magnesium. Coatings of copper and its alloys, zinc or aluminum are unsuitable for storage as they are attacked slowly. Mild steel is the recommended construction material for tanks. Plastics may be used for short-term storage, but are not recommended for long-term use due to deterioration effects and the subsequent risk of contamination. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition. Outside or detached storage is recommended. Tanks must be grounded, vented and have vapor emission controls including floating roofs, inert gas blanketing to prevent the formation of explosive mixtures and pressure vacuum relief valves to control tank pressures. Tanks should be of welded construction and should also be diked.

7.3 Specific end uses
Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Occupational exposure limits

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Ingredient</th>
<th>OSHA PEL - TWA</th>
<th>ACGIH TLV</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>Methanol</td>
<td>200 ppm; 250 mg/m³</td>
<td>200 ppm; 160 mg/m³ TWA</td>
<td>200 ppm; 260 mg/m³ TWA; 250 ppm; 327 mg/m³ STEL</td>
</tr>
</tbody>
</table>

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material, including eyes and mucous membranes, either by direct contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposure should be considered.
SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity
No special reactivity has been reported.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapors may form explosive mixture with air. Reacts with strong oxidizing agents and halogenated hydrocarbons. Avoid excessive heat and...
Methanol is readily biodegradable in water (test: 99% OECD; BOD 80% ThOD).

12.2 Persistence and degradability
Methanol will be broken down into carbon dioxide and water.

When released into the air methanol is expected to exist in the aerosol phase and will be degraded from the ambient atmosphere by the reaction with photochemically produced hydroxyl radicals with an estimated half life of 17.8 days. When released into the soil, methanol is expected to readily biodegrade and leach into groundwater. When released into water it is expected to have a half life of between 1 and 10 days.
12.3 Bioaccumulation potential
Methanol is not expected to bioaccumulate.

12.4 Mobility
Mobility is soil is high.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
Additional ecological information
Do not allow material to run into surface waters, waste water or soil.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
Recycling is the recommended disposal method. Biological treatment may be used for dilute aqueous waste. Incineration should only be performed using a legally approved incinerator fitted with emission controls. Methanol wastes are not suitable for underground injection.
RCRA U-Series: Methanol (CAS #67-56-1); waste number U154 (Ignitable waste)

SECTION 14 - TRANSPORT INFORMATION

Classification of substance in compliance with UN Recommendations
| UN-number: | 1230 |
| Hazard Class: | 3 |
| Sub-Risks: | 6.1 |
| Packing Group: | II |
| Proper Shipping Name: | UN 1230, Methanol |

ADR (Transportation by Road)
| Hazard Class: | 3 |
| Packing Group: | II |
| Danger Label, Tanks: | 3 + 6.1 |
| Danger Label, Packages: | 3 + 6.1 |
| Hazchem: | 2WE |

RID (Transportation by Rail)
| Hazard Class: | 3 |
| Packing Group: | II |
| Danger Label, Tanks: | 3 + 6.1 |
| Danger Label, Packages: | 3 + 6.1 |

ANDR (Transportation by Inland Waterways)
| Hazard Class: | 3 |
| Packing Group: | II |
| Danger Label, Tanks: | 3 + 6.1 |
| Danger Label, Packages: | 3 + 6.1 |

IMDG (Maritime Transport)
| Hazard Class: | 3 |
| Sub-Risks: | 6.1 |
| Packing Group: | II |
| MFAG: | 19 (IMDG suppl. 2002 p. 40) |
| EMS Number: | F-E, S-D |
| Marine Pollutant: | No |

ICAO (Air Transportation)
| Hazard Class: | 3 |
| Sub-Risk: | 6.1 |
| Packing Group: | II |

United States Department of Transportation (Ground Transportation)
| Proper Shipping Name: | Methanol |
| Hazard Class: | 3 |
| UN/NA: | 1230 |
METHANOL HOLDINGS (TRINIDAD) LIMITED

Packing Group: II
NAERG: Guide #131
Packaging Exceptions: 49 CFR 173.4b, 173.150

Limited Quantities (LQ): When substances and their packaging meet the conditions established by ADR, RID, and ADNR only the following prescriptions shall be complied with:
*Each package shall display a diamond-shaped figure with the following inscription: "UN1230".
*In the case of different goods with different identification numbers within a single package, the inscription shall be "LQ".

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U.S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910.200. Flammable liquid, Target organ effect, Toxic by inhalation, Toxic by skin absorption, Irritant

TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Fire Hazard, Acute Health Hazard

SARA 313 Information: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA

SARA 302/304 Emergency Planning & Notification: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): Methanol is a CERCLA reportable material. Methanol (CAS #67-56-1): RQ = 2,268 kg (5,000 lbs)

Clean Air Act (CAA)

Methanol (CAS #67-56-1) is listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).
This product does not contain any Class 1 Ozone depletors.
This product does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986
This product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories

Methanol (CAS #67-56-1) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, DE, ID, IL, ME, MA, MN, NJ, NY, PA, RI, WA.

Canada

WHMIS Hazard Symbol and Classification

- B2 - Flammable liquid with flash points less than 38 °C (100 °F)
- D2A - Teratogenicity and embryotoxicity
- D2B - Eye irritation
- D1A - Toxic material causing immediate and serious toxic effects

Canadian National Pollutant Release Inventory (NPRI): Methanol is listed on the NPRI.

European Economic Community

Labeling (67/548/EEC to 1999/45/EC)

- F - Flammable
- T - Toxic

Risk Phrases: R11 - Highly flammable
R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed
R39/23/24/25 - Toxic danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed

Safety Phrases: S1/2 - Keep locked up and out of the reach of children
S7 - Keep container tightly closed
METHANOL HOLDINGS (TRINIDAD) LIMITED

Safety Phrases:  S16 - Keep away from sources of ignition
                S36/37 - Wear suitable protective clothing and gloves
                S45 - In case of accident of if you feel unwell, seek medical advice immediately (show label where possible)

WGK, Germany (Water danger/protection):  1

Global Chemical Inventory Lists

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory Name</th>
<th>Inventory Listing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada:</td>
<td>Domestic Substance List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada:</td>
<td>Non-Domestic Substance List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>Europe:</td>
<td>Inventory of New and Existing Chemicals (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States:</td>
<td>Toxic Substance Control Act (TSCA)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia:</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand:</td>
<td>New Zealand Inventory of Chemicals (NZIoC)</td>
<td>Yes</td>
</tr>
<tr>
<td>China:</td>
<td>Inventory of Existing Chemicals in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan:</td>
<td>Inventory of Existing and New Chemicals (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea:</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines:</td>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory and are not exempt from listing.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HMIS and NFPA Hazard Rating Legend

<table>
<thead>
<tr>
<th>Health Rating</th>
<th>Flammability Rating</th>
<th>National Fire Protection Association (NFPA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Slight</td>
<td>2 = Moderate</td>
<td>3 = High</td>
</tr>
<tr>
<td>2 = Moderate</td>
<td>3 = High</td>
<td>Instability</td>
</tr>
<tr>
<td>3 = High</td>
<td>4 = Extreme</td>
<td>Special</td>
</tr>
</tbody>
</table>

The information and recommendations herein are taken from data contained in independent industry-recognized references and are believed to be accurate and represent the best information currently available to us. Methanol Holdings (Trinidad) Limited makes no representation or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Users should conduct their own investigations to determine the suitability of the information to their particular purpose. Accordingly, Methanol Holdings (Trinidad) Limited will not be responsible for loss or damages resulting from use of or reliance upon this information.

Revision 2: 07 July 2016
Preparation date: 7 December 2012