SAFETY DATA SHEET

Methanol
Methanex Services (Shanghai) Co., Ltd.

According to GHS (Seventh Revised Edition)

Section 1  Product and Company Identification

> Product Identifier

Product Name  Methanol
Synonyms      -
CAS No.        67-56-1
EC No.         200-659-6
Molecular Formula  CH₄O

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses  Please consult manufacturer.
Uses Advised Against      Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name  Methanex Services (Shanghai) Co., Ltd.
Application Address  Room 403, Build #2, No.458 Fute Rd.(N), Waigaoqiao Free Trade Zone, Shanghai, China
Applicant Post Code  200040
Applicant Telephone  +86-21-60231019
Applicant Fax      +86-21-60231001
Applicant E-mail  fhuang@methanex.com
Supplier Name     Methanex New Zealand Limited
Supplier Address  409 Main North Road, State highway3, Motunui, Taranaki, New Zealand
Supplier Post Code  ——
Supplier Telephone  +64-6-754-9700
Supplier Fax      +64-6-754-9701
Supplier E-mail  ssu@methanex.com

> Emergency Phone Number

Emergency Phone Number  +86-21-6231019

Section 2  Hazards Identification

Hazard class and label elements of the product according to GHS (the seventh revised edition):

> GHS Hazard Class

Flammable Liquids  Category 2
Methanol

Acute Toxicity – Oral  Category 3
Acute Toxicity – Dermal  Category 3
Acute Toxicity – Inhalation  Category 3
Specific Target Organ Toxicity (Single Exposure)  Category 1

> GHS Label Elements

Pictogram

Signal Word  Danger

> Hazard Statements

H225  Highly flammable liquid and vapour
H301  Toxic if swallowed
H311  Toxic in contact with skin
H331  Toxic if inhaled
H370  Causes damage to organs

> Precautionary Statements

Prevention
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233  Keep container tightly closed.
P240  Ground and bond container and receiving equipment.
P242  Use non-sparking tools.
P243  Take action to prevent static discharges.
P260  Do not breathe dust/fume/gas/mist/vapours/spray.
P264  Wash 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.

Response
P312  Call a POISON CENTER/doctor, if you feel unwell.
P330  Rinse mouth.
P301+P310  IF SWALLOWED: Immediately call a POISON CENTER/doctor
P304+P340  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311  IF exposed or concerned: Call a POISON CENTER/doctor.
P361+P364  Take off immediately all contaminated clothing and wash it before reuse.
P303+P361+P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Storage
P405  Store locked up.
P403+P233  Store in a well-ventilated place. Keep container tightly closed.
Section 3 Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration (weight percent, %)</th>
<th>CAS No.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>100</td>
<td>67-56-1</td>
<td>200-659-6</td>
</tr>
</tbody>
</table>

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice
Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Skin Contact
Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Inhalation
Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

Protecting of First-aiders
Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute and Delayed
1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of Any Immediate Medical Attention and Special Treatment Needed
1 Treat symptomatically.
2 Symptoms may be delayed.

Section 5 Fire Fighting Measures

> Extinguishing Media
Suitable Extinguishing Media
Dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter or spread fire.

> Specific Hazards Arising from the Substance or Mixture
1 Will form explosive mixtures with air.
2 Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3 Vapours may travel to source of ignition and flash back.
4 Liquid and vapour are flammable.
5 May emit poisonous fumes on fire.
6 Containers may explode when heated.
7 Fire exposed containers may vent contents through pressure relief valves.
8 May expand or decompose explosively when heated or involved in fire.

> Advice for Firefighters

1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2 Fight fire from a safe distance, with adequate cover.
3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 Accidental Release Measure

> Personal Precautions, Protective Equipment and Emergency Procedures

1 Avoid breathing vapors and contacting with skin and eye.
2 Beware of vapours accumulating to form explosive concentrations.
3 Vapours can accumulate in low areas.
4 Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5 Ensure adequate ventilation. Remove all sources of ignition.
6 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
7 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> Environmental Precautions

1 Prevent further leakage or spillage if safe to do so.
2 Discharge into the environment must be avoided.

> Methods and Materials for Containment and Cleaning Up

1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section 7 Handling and Storage

> Precautions for Handling

1 Avoid inhalation of vapors.
2 Use only non-sparking tools.
3 To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4 Use explosion proof equipment.
5 Handling is performed in a well ventilated place.
6 Wear suitable protective equipment.
7 Avoid contact with skin and eyes.
8 Keep away from heat/sparks/open flames/hot surfaces.
9 Take precautionary measures against static discharges.

> Precautions for Storage

1 Keep containers tightly closed.
2 Keep containers in a dry, cool and well-ventilated place.
3 Keep away from heat/sparks/open flames/ hot surfaces.
4 Store away from incompatible materials and foodstuff containers.

## Section 8 Exposure Controls/Personal Protection

### Control Parameters

#### Occupational Exposure Limit Values

<table>
<thead>
<tr>
<th>Component</th>
<th>Country/Region</th>
<th>Limit Value - Eight Hours</th>
<th>Limit Value - Short Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>USA - OSHA</td>
<td>200 ppm, 260 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>South Korea</td>
<td>200 ppm, 260 mg/m³</td>
<td>250 ppm, 310 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Ireland</td>
<td>200 ppm, 260 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Germany (AGS)</td>
<td>200 ppm, 270 mg/m³</td>
<td>800 ppm, 1080 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Denmark</td>
<td>200 ppm, 260 mg/m³</td>
<td>400 ppm, 520 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>200 ppm, 262 mg/m³</td>
<td>250 ppm, 328 mg/m³</td>
</tr>
</tbody>
</table>

#### Biological Limit Values

No information available

#### Monitoring Methods

1. EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2. GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard).

### Engineering Controls

1. Ensure adequate ventilation, especially in confined areas.
2. Ensure that eyewash stations and safety showers are close to the workstation location.
3. Use explosion-proof electrical/ventilating/lighting/equipment.
4. Set up emergency exit and necessary risk-elimination area.

### Personal Protection Equipment

#### Eye Protection

Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).

#### Hand Protection

Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.

If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.

#### Respiratory protection

#### Skin and Body Protection

Wear fire/flame resistant/retardant clothing and antistatic boots.

## Section 9 Physical and Chemical Properties

**Appearance:** Colorless transparent liquid

**Odor Threshold:** No information available

**Melting Point/Freezing Point (°C):** -98

**Flash Point (°C)( Closed Cup):** 12

**Flammability:** Not applicable

**Odor:** No information available

**pH:** 7

**Initial Boiling Point and Boiling Range (°C):** 65

**Evaporation Rate:** No information available

**Upper/lower explosive limits(%(v/v)):** Upper limit: 44; Lower limit: 5.5
Section 10  Stability and Reactivity

Reactivity  Contact with incompatible substances can cause decomposition or other chemical reactions.

Chemical Stability  Stable under proper operation and storage conditions.

Possibility of Hazardous Reactions  In contact with oxidants causes severe reactions, and may cause a fire or explosion.

Conditions to Avoid  Incompatible materials, heat, flame and spark.

Incompatible Materials  Oxidants, alkali metals, alkaline earth metals and aluminum.

Hazardous Decomposition products  Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11  Toxicological Information

> Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>LD₅₀(Oral)</th>
<th>LD₅₀(Dermal)</th>
<th>LC₅₀(Inhalation, 4h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>5628mg/kg(Rat)</td>
<td>15800mg/kg(Rabbit)</td>
<td>83.867mg/L(Rat)</td>
</tr>
</tbody>
</table>

> Skin Corrosion/Irritation  No information available

> Serious Eye Damage/Irritation  No information available

> Skin Sensitization  No information available

> Respiratory Sensitization  No information available

> Germ Cell Mutagenicity  No information available

> Carcinogenicity

<table>
<thead>
<tr>
<th>ID</th>
<th>CAS No.</th>
<th>Component</th>
<th>IARC</th>
<th>NTP</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>67-56-1</td>
<td>Methanol</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>
> Reproductive Toxicity
  No information available

> Reproductive Toxicity (Additional)
  No information available

> STOT-Single Exposure
  Causes damage to organs (Category 1) (Methanol)

> STOT-Repeated Exposure
  No information available

> Aspiration Hazard
  No information available

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**Section 12  Ecological Information**

> Acute Aquatic Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Fish</th>
<th>Crustaceans</th>
<th>Algae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>LC₅₀: 24000mg/L (96h)(Fish)</td>
<td>EC₅₀: 24500mg/L (48h)</td>
<td>No information available</td>
</tr>
</tbody>
</table>

> Chronic Aquatic Toxicity
  No information available

> Others

Persistence and Degradability
Bioaccumulative Potential
Mobility in Soil
Results of PBT and vPvB Assessment
  No information available

Methanol does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

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**Section 13  Disposal Considerations**

Waste Chemicals
  Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated Packaging Disposal Recommendations
  Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.

  Refer to section 13.1 and 13.2.

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**Section 14  Transport Information**
Transporting Label

Marine pollutant: None

UN Number: 1230
UN Proper Shipping Name: METHANOL
Transport Hazard Class: 3
Transport Subsidiary Hazard Class: 6.1
Packing Group: II

Section 15 Regulatory Information

> International Chemical Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>TSCA</th>
<th>DSL</th>
<th>IECSC</th>
<th>NZIoC</th>
<th>PICCS</th>
<th>KECI</th>
<th>AICS</th>
<th>ENCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

[EINECS] European Inventory of Existing Commercial Chemical Substances.
[TSCA] United States Toxic Substances Control Act Inventory.
[DSL] Canadian Domestic Substances List.
[IECSC] China Inventory of Existing Chemical Substances.
[NZIoC] New Zealand Inventory of Chemicals.
[PICCS] Philippines Inventory of Chemicals and Chemical Substances.
[KECI] Existing and Evaluated Chemical Substances.
[AICS] Australia Inventory of Chemical Substances.
[ENCS] Existing And New Chemical Substances.

Note

“√” Indicates that the substance included in the regulations
“×” That no data or included in the regulations

Section 16 Additional Information

Creation Date: 2018/05/02
Revision Date: 2018/05/02
Reason for Revision: -

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 7th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user’s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.