

## **SAFETY DATA SHEET**

This safety data sheet was created pursuant to the requirements of: Notification of Ministry of Industry: Hazard Classification and Communication System of Hazardous Substances B.E. 2555 (2012)

Issuing Date 26-Jun-2017 Revision date 15-Sep-2025 Revision Number 2.2

1. Identification

Product identifier

Product Name Methanol

Other means of identification

UN number or ID number UN1230

Synonyms Methyl alcohol, wood alcohol, methyl hydroxide

Molecular weight 32.04

Registration Number(s) No information available

Recommended use of the chemical and restrictions on use

**Recommended use** Industrial use, Professional use, Consumer use:

Solvent, Fuels, Raw material, Cleaning agent, Laboratory reagent, Use in oil and gas field drilling and production operations, Water treatment chemicals, wastewater, Consumer use

of cleaning agents and de-icers

Restrictions on use None known

Other information

Chemical Family - Alcohols

Supplier's details

#### Manufacturer

Methanex Methanol Company 5850 Granite Parkway Suite 400 Plano, TX 75024 USA

Tel: +1 972 702 0909 Fax: +1 972 233 1266

Atlas Methanol Company UnlimitedPoint Lisas Industrial Estate Point Lisas Republic of Trinidad and Tobago

Tel: +1 868 679 4400

Fax: +1 868 679 2400

Methanex New Zealand Limited 409 Main North Road, SH3, Motunui Private Bag 2011 New Plymouth 4342 New Zealand

Phone: +64 (6) 7549700

Methanex Chile SpA Rosario Norte 100, Piso 6 Las Condes, Santiago, Región Metropolitana Zip code: 7561258

Chile

Tel: +562 23744000

Methanex in Beaumont 5470 N Twin City Hwy Nederland, TX, 77627 T: +1 409 723 1900

Methanex in Beaumont (Natgasoline facility) 2366 Sulphur Plant Road Beaumont, TX 77705 T: +1 409 344 4900

Emergency telephone number

Emergency telephone NCEC: 001 800 120 666 751 (toll-free, access from Thailand only)

## 2. Hazard(s) identification

## Classification of the substance or mixture

| Acute toxicity - Oral                              | Category 3             |
|--|------------------------|
| Acute toxicity - Dermal                            | Category 3             |
| Acute toxicity - Inhalation (Vapors)               | Category 3             |
| Serious eye damage/eye irritation                  | Category 2A            |
| Reproductive toxicity                              | Category 1B            |
| Specific target organ toxicity (single exposure)   | Category 1, Category 3 |
| Specific target organ toxicity (repeated exposure) | Category 1             |
| Hazardous to the aquatic environment - acute       | Category 3             |
| Flammable liquids                                  | Category 2             |

## GHS Label elements, including precautionary statements



#### Signal word

#### Danger

#### **Hazard statements**

Highly flammable liquid and vapor.

Toxic if swallowed.

Toxic in contact with skin.

Toxic if inhaled.

Causes serious eye irritation.

May damage fertility or the unborn child.

Causes damage to organs.

May cause drowsiness or dizziness.

Causes damage to organs through prolonged or repeated exposure.

Harmful to aquatic life.

## **Precautionary Statements - Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Use personal protective equipment as required.

Wash face, hands and any exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Do not breathe dust.

Avoid release to the environment.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use only non-sparking tools.

Take action to prevent static discharges.

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

Keep cool.

## **Precautionary Statements - Response**

Specific treatment (see supplemental first aid instructions on this label).

IF exposed: Call a POISON CENTER or doctor.

#### **Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

#### Skin

Call a POISON CENTER or doctor/physician if you feel unwell.

Wash contaminated clothing before reuse.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

#### Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician.

## Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Rinse mouth.

#### **Fire**

In case of fire: Use CO2, dry chemical, or foam for extinction.

#### **Precautionary Statements - Storage**

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

**Precautionary Statements - Disposal** 

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

#### Other hazards which do not result in classification

Risk of blindness after swallowing the product.

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read carefully and follow all instructions.

## 3. Composition/information on ingredients

#### **Substance**

**CAS No.** 67-56-1

| Chemical name | CAS No. | Weight-% |
|---------------|---------|----------|
| Methanol      | 67-56-1 | 100      |
| 67-56-1       |         |          |

## 4. First-aid measures

#### **Description of necessary first aid measures**

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

**Inhalation** Remove to fresh air. IF exposed or concerned: Get medical advice/attention. If breathing

has stopped, give artificial respiration. Get medical attention immediately. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained

personnel should) give oxygen.

**Skin contact** Wash off immediately with plenty of water for at least 15 minutes. Remove/Take off

immediately all contaminated clothing. Get immediate medical attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present

and easy to do. Continue rinsing. Get immediate medical attention.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious

person. Get immediate medical attention.

<u>For emergency responders</u>
Self-protection of the first aider

Self-protection of the first aider Do not breathe vapor or mist. Remove all sources of ignition. Ensure that medical personnel

are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

**Symptoms** Exposure may cause nausea, weakness and central nervous system effects, headache,

vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms. May cause redness and tearing

of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

Effects of Exposure None known.

Indication of immediate medical attention and special treatment needed, if necessary

Note to physicians The severity of outcome following methanol ingestion may be more related to the time

between ingestion and treatment, rather than the amount ingested; therefore, there is a need for rapid treatment of any ingestion exposure. Call a Poison Center. Antidote: Fomepizole enhances elimination of metabolic formic acid. Antidote should be administered by qualified medical personnel.

## 5. Fire-fighting measures

#### Suitable (and unsuitable) extinguishing media

Suitable Extinguishing Media

Use water spray to cool fire-exposed containers. Water will not cool methanol below its flash

point. Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media Do not use straight streams. Do not scatter spilled material with high pressure water

streams.

### Specific hazards arising from the chemical

Specific hazards arising from the chemical

Mixtures >20% methanol with water: flammable. Highly flammable liquid and vapor. Vapors are heavier than air and may spread along floors. Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. May burn with an almost invisible flame in bright light.

Hazardous combustion products Toxic gases or vapors, Carbon monoxide, Carbon dioxide (CO2), Formaldehyde.

#### Special protective equipment and precautions for fire-fighters

Special protective equipment and precautions for fire-fighters

Cool containers with flooding quantities of water until well after fire is out. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

### 6. Accidental release measures

## Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not breathe

vapor or mist.

Environmental precautions

Personal precautions

**Environmental precautions** Avoid release to the environment. Dispose of contents/containers in accordance with local

regulations. Biodegradable at low concentrations. Soluble in water. When released, this product is expected to evaporate. Contact authorities in the event of pollution of soil and aquatic environment or discharge into drains. Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from

entering drains.

#### Methods and material for containment and cleaning up

Methods for containment Take precautionary measures against static discharge. Stop leak if you can do it without

risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and

transfer to containers for later disposal.

Methods for cleaning up Small spill: Absorb or cover with dry earth, sand or other non-combustible material and

transfer to containers. Use non-sparking tools. Collect spillage. Large spill: Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent

material. Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Reference to other sections Safe handling: see Section 7. Personal protection equipment (PPE): see Section 8.

Disposal: see Section 13.

## 7. Handling and storage

#### Precautions for safe handling

#### Advice on safe handling

Use according to package label instructions. Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not enter confined area unless adequately ventilated.

#### General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist.

#### Conditions for safe storage, including any incompatibilities

**Storage Conditions** 

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep unauthorized personnel away. Store locked up.

Incompatible materials

Lead, Aluminum, Zinc, Oxidizing agent, Strong acids, Strong bases, Polyethylene, Polyvinyl chloride (PVC), Nitriles.

## 8. Exposure controls/personal protection

#### **Control Parameters**

#### **Exposure guidelines**

| Chemical name | Thailand          | ACGIH TLV     |
|---------------|-------------------|---------------|
| Methanol      | No data available | TWA: 200 ppm  |
| 67-56-1       |                   | STEL: 250 ppm |
|               |                   | pSk           |

#### Biological occupational exposure limits

| Chemical name | ACGIH                                     |
|---------------|---|
| Methanol      | 15 mg/L - urine (Methanol) - end of shift |
| 67-56-1       |   |

#### Appropriate engineering controls

Engineering controls Provide local exhaust ventilation. Handle product only in closed system or provide

appropriate exhaust ventilation. All equipment used when handling the product must be grounded. Ensure that eyewash stations and safety showers are close to the workstation

location.

#### Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Antistatic boots.

**Hand protection** Wear suitable gloves. Impervious gloves. Butyl rubber.

Respiratory protection Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or

other positive-pressure mode. Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of

the product and the safe working limits of the selected respirator

Environmental exposure controls Avoid release to the environment. Prevent entry into waterways, sewers, basements or

confined areas.

## 9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance Clear liquid
Physical state Liquid
Color Clear
Odor Alcohol
Odor threshold 4.2 - 5960 ppm

Property Values Remarks • Method

pH No data available

Flash point 11 °C / 51.8 °F

Evaporation rate4.1Butyl acetate = 1FlammabilityNo data available

Upper/lower flammability or

explosive limits

Upper flammability or explosive 36.5%

limits

Lower flammability or explosive 5.5%

limits

Vapor pressure 12.8 kPa @ 20 °C

Relative vapor density 1.1 @ 20 °C (air = 1)

**Relative density** 0.791 - 0.793 @20°C

Solubility(ies)

Water solubility Miscible in water

Solubility in other solvents No data available

Partition coefficient -0.77 log Pow

Autoignition temperature 464 °C / 867.2 °F

Decomposition temperatureNo data availableSADT (°C)No data available

Viscosity

Kinematic viscosity

No data available

**Dynamic viscosity** 0.8 cP @ 20 °C

Other information

Molecular weight 32.04 VOC content 100%

Softening point No information available

Information with regard to physical hazard classes

Explosive properties Vapors may form explosive mixtures with air

Oxidizing properties No information available

## 10. Stability and reactivity

Reactivity

**Reactivity** Containers may rupture or explode if exposed to heat.

Chemical stability

Stability Stable under normal conditions. May form flammable/explosive vapor-air mixture.

**Explosion data** 

Sensitivity to mechanical impact None. Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions 
None under normal processing.

Conditions to avoid

Conditions to avoid Heat, flames and sparks. Excessive heat. Containers may rupture or explode if exposed to

heat.

Incompatible materials

Incompatible materials Lead, Aluminum, Zinc, Oxidizing agent, Strong acids, Strong bases, Polyethylene, Polyvinyl

chloride (PVC), Nitriles.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide, Carbon dioxide (CO2), May release flammable gases: Formaldehyde

## 11. Toxicological information

## Information on the likely routes of exposure

**Product Information** 

Inhalation Toxic by inhalation. May cause drowsiness or dizziness.

**Eye contact** Causes serious eye irritation.

**Skin contact** Toxic in contact with skin.

Ingestion Toxic if swallowed. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Exposure may cause nausea, weakness and central nervous system effects, headache,

vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms. May cause redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

**Acute toxicity** 

**Numerical measures of toxicity**Acute Toxicity Estimate (ATE) values provided as a reflection of the hazard classification.

ATEmix (oral) 100 mg/kg ATEmix (dermal) 300 mg/kg ATEmix (inhalation-vapor) 3 mg/l

**Component Information** 

| - | Chemical name | Oral LD50          | Dermal LD50            | Inhalation LC50         |
|---|---------------|--------------------|------------------------|-------------------------|
| I | Methanol      | = 6200 mg/kg (Rat) | = 15840 mg/kg (Rabbit) | = 22500 ppm (Rat) 8 h   |
|   |               |                    |                        | = 64000 ppm ( Rat ) 4 h |

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation May cause skin irritation. Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Causes serious eye irritation.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** Contains no ingredient listed as a carcinogen.

Reproductive toxicity Contains a known or suspected reproductive toxin. May damage fertility or the unborn child.

**STOT - single exposure** Causes damage to organs. May cause drowsiness or dizziness.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

**Target organ effects** Central nervous system. Optic nerve.

**Aspiration hazard** No information available.

### 12. Ecological information

**Ecotoxicity** Avoid release to the environment. Harmful to aquatic life.

**Component Information** 

| Component intermation | <u> </u>             |           |                      |                |
|-----------------------|----------------------|-----------|----------------------|----------------|
| Chemical name         | Fish                 | Crustacea | Algae/aquatic plants | Toxicity to    |
|                       |                      |           |                      | microorganisms |
| Methanol              | LC50: =28200mg/L     | -         | -                    | -              |
|                       | (96h, Pimephales     |           |                      |                |
|                       | promelas)            |           |                      |                |
|                       | LC50: >100mg/L (96h, |           |                      |                |

| Pimephales promelas)    |   |
|-------------------------|---|
| LC50: 19500 -           |   |
| 20700mg/L (96h,         |   |
| Oncorhynchus mykiss)    |   |
| LC50: 18 - 20mL/L (96h, | , |
| Oncorhynchus mykiss)    |   |
| LC50: 13500 -           |   |
| 17600mg/L (96h,         |   |
| Lepomis macrochirus)    |   |

#### **Component Information**

| Chemical name | Earthworm                     | Avian | Honeybees |
|---------------|-------------------------------|-------|-----------|
| Methanol      | Acute Toxicity: LC50 > 1      | -     | -         |
|               | mg/cm2 (Eisenia foetida, 48 h |       |           |
|               | filter paper)                 |       |           |

Persistence and degradability Readily biodegradable.

Bioaccumulative potential Not expected to bioaccumulate. BCF: <10.

| Chemical name | Partition coefficient | Bioconcentration factor (BCF) | Trophic magnification factor (TMF) |
|---------------|-----------------------|-------------------------------|------------------------------------|
| Methanol      | -0.77                 | 10                            | -                                  |

Mobility in soil Adsorbs on soil.

Other adverse effects No information available.

## 13. Disposal considerations

Disposal methods

Waste from residues/unused

products

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of

waste in accordance with environmental legislation.

Contaminated packaging

Recover or recycle if possible. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

14. Transport information

**IMDG** 

UN number or ID number UN1230 UN proper shipping name METHANOL

Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II

Special Provisions 279 F-E S-D

**Description** UN1230, METHANOL, 3 (6.1), II, (11°C C.C.)

#### **IATA**

UN number or ID number
UN proper shipping name
Transport hazard class(es)
Subsidiary hazard class
Packing group
Special Provisions
ERG Code
UN1230
Methanol
6.1
II
Special Provisions
A113

**Description** UN1230, Methanol, 3 (6.1), II

#### **ADR**

UN number or ID number UN1230 UN proper shipping name METHANOL

Description UN1230, METHANOL, 3 (6.1), II

Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II
Classification code FT1
Special Provisions 279

#### DOT

UN number or ID number UN1230 Proper shipping name UN1230

Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II

Special Provisions IB2, T7, TP2

DOT Marine Pollutant NP

Description UN1230, METHANOL, 3 (6.1), II

## 15. Regulatory information

Safety, health and environmental regulations specific for the product in question

Thailand - Applicable regulations:

## Hazardous Substances Act, B.E. 2535

- Type 1: hazardous substance is that of which the production, import, export, or having in possession must comply with the specified criteria and procedures
- Type 4: hazardous substance is that of which the production, import, export, or having in possession is prohibited
- Substances subject to List 5.6 Groups of chemicals controlled according to their properties: A substance or compound that is not listed by an agency responsible for the control and supervision of production or import shall be in accordance with procedures

#### Industrial use

Department of Industrial Works (DIW):

| Chemical name | Туре |
|---------------|------|
| Methanol      | 1    |

Substances subject to List 5.6 Groups of chemicals controlled according to their properties: Please consult the Department of Industrial Works (DIW) for official guidance.

#### Food, drug and consumption

Food & Drug Administration (FDA):

| Chemical name Type |
|--------------------|
|--------------------|

| Chemical name | Туре |
|---------------|------|
| Methanol      | 1    |
|               | 4    |

Agricultural use

Department of Agriculture (DoA): Not applicable

Department of Fisheries (DOF): Not applicable

Department of Livestock Development (DLD): Not applicable

Used as fuel

Department of Energy Business (DOEB): Not applicable

## Notification of the Ministry of Industry regarding Hazardous Substances in accordance to chapter 3 Duties and Civil Liabilities B.E. 2538

| Chemical name      | Hazardous Substances |
|--------------------|----------------------|
| Methanol - 67-56-1 | Listed               |

## Notification of the Ministry of Labor on Prescription of hazardous chemicals which employers must provide health check-ups for employees

| Chemical name      | Harmful Substances Requiring Workers to Subject to |
|--------------------|--|
|                    | Medical Exams                                      |
| Methanol - 67-56-1 | Listed   |

#### **International Regulations**

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

#### **International Inventories**

TSCA Listed
DSL/NDSL Listed.
EINECS/ELINCS Listed.
ENCS Listed.
IECSC Listed.
KECI Listed.
PICCS Listed.

#### Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing Chemicals Inventory

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AIIC - Australian Inventory of Industrial Chemicals

## 16. Other information

Issuing Date 26-Jun-2017

**Revision date** 15-Sep-2025

**Revision Note** Manufacturer information. Updated format.

# **Key or legend to abbreviations and acronyms used in the safety data sheet** *List may include phrases which are not applicable to this product*

| ACGIH   | American Conference of Governmental Industrial Hygienists                              |
|---------|--|
| ADN     | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| _       | (Europe)   |
| ADR     | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)    |
| AIIC    | Australian Inventory of Industrial Chemicals   |
| ATE     | Acute Toxicity Estimate  |
| ASTM    | American Society for the Testing of Materials  |
| bar     | Biological Reference Values for Chemical Compounds in the Work Area                    |
| BAT     | Biological tolerance values for occupational exposure                                  |
| BEL     | Biological exposure limits   |
| bw      | Body weight  |
| Ceiling | Maximum limit value  |
| CMR     | Carcinogen, Mutagen or Reproductive Toxicant   |
| DOT     | Department of Transportation (United States)   |
| DSL     | Domestic Substances List (Canada)  |
| EmS     | Emergency Schedule   |
| ENCS    | Existing and New Chemical Substances (Japan)   |
| EPA     | U.S. Environmental Protection Agency   |
| GHS     | Globally Harmonized System   |
| IARC    | International Agency for Research on Cancer  |
| IATA    | International Air Transport Association  |
| IBC     | International Code for the Construction and Equipment of Ships carrying Dangerous      |
|         | Chemicals in Bulk  |
| ICAO    | International Civil Aviation Organization  |
| IECSC   | Inventory of Existing Chemical Substances in China                                     |
| IMDG    | International Maritime Dangerous Goods   |
| IMO     | International Maritime Organization  |
| ISO     | International Organization for Standardization   |
| KECI    | Korean Existing Chemicals Inventory  |
| LC50    | Lethal Concentration to 50% of a test population                                       |
| LD50    | Lethal Dose to 50% of a test population (Median Lethal Dose)                           |
| MARPOL  | International Convention for the Prevention of Pollution from Ships                    |
| n.o.s.  | Not Otherwise Specified  |
| NOAEC   | No Observed Adverse Effect Concentration   |
| NOAEL   | No Observed Adverse Effect Level   |
| NOELR   | No Observable Effect Loading Rate  |
| NZIoC   | New Zealand Inventory of Chemicals   |
| OECD    | Organization for Economic Cooperation and Development                                  |
| OEL     | Occupational exposure limits   |
| PBT     | Persistent, Bioaccumulative and Toxic substance  |
| PICCS   | Philippines Inventory of Chemicals and Chemical Substances                             |
| PMT     | Persistent, Mobile and Toxic   |
| PPE     | Personal protective equipment  |
| QSAR    | Quantitative Structure Activity Relationship   |
| RID     | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)    |
| SADT    | Self-Accelerating Decomposition Temperature  |
| SAR     | Structure-activity relationship  |
| SDS     | Safety Data Sheet  |
| SL      | Surface Limit  |
| OL      | Puriace Limit  |

| STEL    | Short Term Exposure Limit                             |
|---------|---|
| STOT RE | Specific target organ toxicity - Repeated exposure    |
| STOT SE | Specific target organ toxicity - Single exposure      |
| TCSI    | Taiwan Chemical Substance Inventory                   |
| TDG     | Transport of Dangerous Goods (Canada)                 |
| TSCA    | Toxic Substances Control Act (United States)          |
| TWA     | Time-Weighted Average                                 |
| UN      | United Nations  |
| VOC     | Volatile organic compounds                            |
| vPvB    | Very Persistent and Very Bioaccumulative              |
| vPvM    | Very Persistent and Very Mobile                       |
| As      | Allergenic substance                                  |
| DS      | Dermal Sensitizer                                     |
| Ot      | Ototoxicant   |
| pOt     | Ototoxicant - potential to cause hearing disorders    |
| PS      | Photosensitizer                                       |
| RS      | Respiratory Sensitizer                                |
| S       | Sensitizer  |
| poS     | Sensitizer - capable of causing occupational asthma   |
| Sa      | Simple asphyxiant                                     |
| Sd      | Skin designation                                      |
| pSd     | Skin designation - potential for cutaneous absorption |
| Sdv     | Skin designation - vacated                            |
| Sk      | Skin notation   |
| dSk     | Skin notation - danger of cutaneous absorption        |
| pSk     | Skin notation - potential for cutaneous absorption    |

#### Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

U.S. Environmental Protection Agency

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

U.S. National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set United Nations World Health Organization (WHO)

#### Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. Users should make their own investigations to determine the suitability of the information for their particular purposes. This document is intended as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Methanex Corporation and its subsidiaries make no representations or warranties, either express 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. Accordingly, Methanex Corp. will not be responsible for damages resulting from use of or reliance upon this information

**End of Safety Data Sheet**