



Safety Data Sheet

Methanol

SECTION 1: Identification

1.1 Product identifier

Product name	Methanol
Product number	Not available
Brand	Not available
Substance name	Methanol
EC no.	200-659-6
CAS no.	67-56-1
Index no.	603-001-00-X

1.2 Other means of identification

Not available

1.3 Recommended use of the chemical and restrictions on use

Industrial solvent; starting material for organic synthesis of formaldehydes, methyl esters of organic and inorganic acids, methacrylates, methylamines, methyl anhydrides, ethylene glycol and pesticides; antifreeze for automotive radiators and air brakes; ingredient of gasoline and diesel oil antifreezes; octane booster in gasoline; as fuel for picnic stoves and soldering torches; extractant for animal and vegetable oils; denaturing ethanol; softening agent for pyroxylin plastics; solvent adjuvant for polymers; solvent in the manufacturing of cholesterol, streptomycin, vitamins, hormones and other pharmaceuticals; food additive permitted in foods for human consumption; ingredient in paint, varnish removers, cleaning and dewaxing preparations, spirit duplicating fluids and embalming fluids; used in the manufacture of photographic film, celluloid, textile soap, wood stains, coated fabrics, shatter-proof glass, paper coating, waterproofing formulations, artificial leather, synthetic indigo and other dyes.

1.4 Supplier's details

Name	Duda Energy LLC
Address	1112 Brooks St. Decatur, AL 35601 USA
Telephone	256.340.4866
Fax	Not available
email	Not available

1.5 Emergency phone number(s)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS rev. 5

- Acute toxicity, dermal (chapter 3.1), Cat. 3
- Acute toxicity, inhalation (chapter 3.1), Cat. 3
- Acute toxicity, oral (chapter 3.1), Cat. 3
- Flammable liquids (chapter 2.6), Cat. 2
- Specific target organ toxicity, single exposure (chapter 3.8), Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H370

Causes damage to organs

H301

Toxic if swallowed

H311

Toxic in contact with skin

H331

Toxic if inhaled

H225

Highly flammable liquid and vapor

Precautionary statement(s)

P210

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

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.

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 dust/fume/gas/mist/vapours/spray.

P261

Avoid breathing 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.

P301+P310

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

P302+P352

IF ON SKIN: Wash with plenty of water/...

P303+P361+P353

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

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/...
P311	Call a POISON CENTER/doctor/...
P312	Call a POISON CENTER/doctor/... if you feel unwell.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use ... to extinguish.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P403+P235	Store in a well ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Statement regarding ingredients of unknown toxicity

Not available

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	Methanol
EC no.	200-659-6
CAS no.	67-56-1
Index no.	603-001-00-X
Formula	CH4O
Molecular weight	32.04
Other names / synonyms	UN 1230 (DOT); METHYL ALCOHOL
Impurities and stabilizing additives	Not available

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	This material is toxic and will absorb into skin.
If inhaled	IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or

equal to that advised under Respirator Recommendation.

In case of skin contact

IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

In case of eye contact

First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

If swallowed

DO NOT INDUCE VOMITING. Volatile chemicals have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

Personal protective equipment for first-aid responders

Be aware of materials involved and take precautions to protect self.

4.2 Most important symptoms/effects, acute and delayed

Symptoms of exposure to this compound may include headache, fatigue, nausea, dizziness, stupor, cramps, dermatitis, visual impairment or complete blindness (may be permanent); acidosis, convulsions, mydriasis, circulatory collapse, respiratory failure, death, irritation of mucous membranes, damage to the central nervous system (especially the optic nerve), injury to the kidneys, liver, heart and other organs; peripheral neuritis, gastrointestinal disturbances, photophobia and conjunctivitis, followed by definite eye lesions; narcosis, unconsciousness, shallow breathing, cyanosis, coma, fall in blood pressure, hyperemia of the optic disk with blurring of the margin; burning sensation, coughing, wheezing, laryngitis, vomiting, delirium, pain in the eyes, giddiness, vertigo, severe abdominal pain, back pain, dyspnea, motor restlessness, cold clammy extremities and diarrhea.

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

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an

ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Alcohol resistant foam. Water fog. Carbon dioxide (CO₂). Dry chemical powder, sand, or earth may be used for small fires only.

Do Not use water jet as an extinguisher as this will spread the fire.

5.2 Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants.

Material will float and may ignite on surface of water.

During fire, gases hazardous to health may be formed.

5.3 Special protective actions for fire-fighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Further information

In case of fire and/or explosion, do not breathe fumes. Move containers from fire area if you can do so without risk.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). WEar appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions

Avoid discharge into drains, water courses, or onto ground. Use appropriate containment to avoid environmental contamination.

6.3 Methods and materials for containment and cleaning up

If you spill this chemical, FIRST REMOVE ALL SOURCES OF IGNITION. Then, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store, or open near an open flame or other sources of heat/ignition. Protect material from direct sunlight. Use explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. When using, do not eat, drink, or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

For additional information regarding bonding and grounding equipment, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association NFPA 70, "National Electrical Code."

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks, and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials.

Specific end use(s)

None, other than stated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Methyl alcohol (CAS: 67-56-1)

REL (Inhalation): 200 ppm, (ST) 250 ppm (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

2. Methyl alcohol (CAS: 67-56-1)

PEL (Inhalation): 200 ppm, (ST) 250 ppm, (C) 1000 ppm (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Methyl alcohol (CAS: 67-56-1)

PEL (Inhalation): 260 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

4. Methyl alcohol (CAS: 67-56-1)

PEL (Inhalation): 200 ppm (OSHA)

OSHA Annotated Table Z-1, www.osha.gov

5. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

PEL-TWA: 200 ppm, 260 mg/m³ (OSHA)

USA. Occupational Exposure Limits

(OSHA) - Table Z-1 Limits for Air

Contaminants

6. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

Headache, Nausea, Dizziness, Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI[®] section) Danger of cutaneous absorption

7. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

PEL-TWA: 200 ppm, 325 mg/m³ (NIOSH)

8. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

STEL: 250 ppm (ACGIH)

9. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

Headache, Nausea, Dizziness, Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI[®] section) Danger of cutaneous absorption

10. METHYL ALCOHOL (CAS: 67-56-1 EC: 200-659-6)

PEL-TWA: 200 ppm (ACGIH)

8.2 Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (Typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eye wash and emergency shower stations.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Goggles, Full face respirator

Skin protection

*MINIMUM PROTECTIVE CLOTHING: Not available *RECOMMENDED GLOVE MATERIALS: Recommended Glove Type For Use With Neat (Undiluted) Chemical: Recommendations based on permeation test results are made for handling the neat (undiluted) chemical. If this chemical makes direct contact with your glove, or if a tear, puncture or hole develops, replace them at once. Suggested Glove Type(s) (RAD): No information available

Body protection

Wear full chemical resistant clothing.

Respiratory protection

*RECOMMENDED RESPIRATOR: When working with this chemical, wear a NIOSH-approved full face positive pressure supplied-air respirator or a self-contained breathing apparatus (SCBA).

[651] *STORAGE PRECAUTIONS: You should store this chemical in an explosion-proof refrigerator and keep it away from oxidizing materials. STORE AWAY FROM SOURCES OF IGNITION. *SPILLS AND LEAKAGE: If you spill this chemical, FIRST REMOVE ALL SOURCES OF IGNITION. Then, use

absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned. *DISPOSAL AND WASTE TREATMENT: Not available

Thermal hazards

Wear appropriate thermal protective clothing when necessary.

Environmental exposure controls

Not available

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Liquid
Odor	Mild Characteristic
Odor threshold	Not available
pH	Not available
Melting point/freezing point	-98 °C
Initial boiling point and boiling range	64.6 °C 101.325 kPa
Flash point	11 °C
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable
Upper/lower flammability limits	Upper: 36% Lower: 7.3%
Upper/lower explosive limits	Not available/Not available
Vapor pressure	100 mm Hg @ 21.2 C; 237.87 mm Hg @ 38 C (RAD)
Vapor density	1.11
Relative density	0.7913 @ 20/4 C
Solubility(ies)	Miscible (Water)
Partition coefficient: n-octanol/water	-0.77
Auto-ignition temperature	463.89 °C
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidizing properties	Not available

Other safety information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

This product is stable and non-reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, and other ignition sources. Avoid temperatures exceeding the flash point. Avoid contact with incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Methanol (CAS 67-56-1)

LC50 Inhalation - Cat - 85.41 mg/l - 4.5 h

LC50 Inhalation - Rat - 64000 ppm - 4 h

LD50 Skin - Rabbit - 15800 mg/kg

LD50 Oral - Dog - 8000 mg/kg

LD50 Oral - Mouse - 7300 mg/kg

LD50 Oral - Rabbit - 14.4 g/kg

LD50 Oral - Rat - 5628 mg/kg

Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Not a respiratory or skin sensitizer.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Summary of evaluation of the CMR properties

Not available.

STOT-single exposure

Causes damage to organs.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Not an aspiration hazard.

Additional information

Causes damage to organs through prolonged or repeated exposure.

SECTION 12: Ecological information

Toxicity

This product is not classified as environmental hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Methanol (CAS 67-56-1)

EC50 - Daphnia magna (water flea) - >10000 mg/l - 48 h

LC50 - Pimephales promelas (fathead minnow) - >100 mg/l - 96 h

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

Not available

Mobility in soil

Not available

Results of PBT and vPvB assessment

Not available

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

Disposal of the product

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Disposal of contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste treatment

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residue (see: Disposal of contaminated packaging); this material and its container must be disposed of in a safe manner.

Sewage disposal

Not available

Other disposal recommendations

Dispose of in accordance with all applicable regulations.

SECTION 14: Transport information

DOT (US)

UN Number:

Class:

Packing Group:

Proper Shipping Name:

Reportable quantity (RQ):

Marine pollutant:

Poison inhalation hazard:

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*PROPER SHIPPING NAME (IATA): Methanol

*UN/ID NUMBER: UN1230

*HAZARD CLASS: 3 SUBSIDIARY RISK: 6.1 PACKING GROUP: II

*LABELS REQUIRED: Flammable liquid and Poison

*PACKAGING: PASSENGER: PKG. INSTR.: 305, Y305 MAXIMUM QUANTITY: 1 L, 1 L
CARGO : PKG. INSTR.: 307 MAXIMUM QUANTITY: 60 L

*SPECIAL PROVISIONS: None

IMDG

UN Number:

Class:

Packing Group:

EMS Number:

Proper Shipping Name:

IATA

UN Number:

Class:

Packing Group:

Proper Shipping Name:

SECTION 15: Regulatory information

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

Pennsylvania Right To Know Components

Chemical name: Methanol

CAS number: 67-56-1

New Jersey Right To Know Components

Common name: METHYL ALCOHOL

CAS number: 67-56-1

Massachusetts Right To Know Components

Chemical name: Methanol

CAS number: 67-56-1

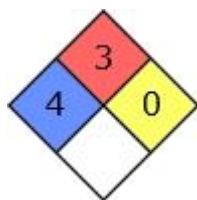
15.2 Chemical Safety Assessment

Not available

HMIS Rating

Methanol
HEALTH 4
FLAMMABILITY 3
PHYSICAL HAZARD 0
PERSONAL PROTECTION

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

The information provided in this Safety Data Sheet is correct to the best of Duda Energy LLC's knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This Safety Data Sheet only contains

information relating to safety and does not replace any product information or product specification. Please note, the content may be changed, corrected, or deleted at any time without notice and may not always necessarily reflect the most current data. Duda Energy LLC will assume no responsibility for any trouble or failure caused by the errors in the information provided, nor any damage associated with the usage of the information.

16.2 Preparation information

Version: 2

Revised: 04-18-2017