

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/ UNDERTAKING

Identification of the substance or preparation:	Methanol
Country of origin:	Iran (Islamic Republic of Iran)
CAS Number:	67-56-1
Synonyms:	Methyl alcohol , methyl hydrate , wood spirit , methyl hydroxide
Company/undertaking identification	National Petrochemical Company
	Iran Petrochemical Commercial
	Company (IPCC)
Manufacturer subcontractor:	None
Emergency phone number:	00982188881735
Contact email:	msds@petrochem-ir.net
Fax:	00982188839511
Association/Organization:	None
Use of the substance/Preparation:	Feed stock for many end products such as Formaldehyde and Acetic acid , solvent ,many kinds of fuel etc.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous substances: Hazardous label(s): Toxicological characteristics: Classified as: Methanol 6 (toxics) Toxic Hazardous according to NOHSC criteria Dangerous good by the criteria of the ADG code

Other component:

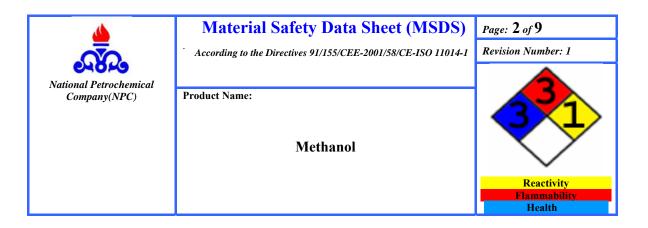
None

3. IDENTIFICATION OF HAZARDS

Risk phrases:

Skin contact:

Eye contact: If swallowed: R11 Highly flammable, R23/25 Toxic by inhalation and if swallowed. Will result in dryness (defatting) and moderate irritation. A moderate eye irritant. Toxic if swallowed.



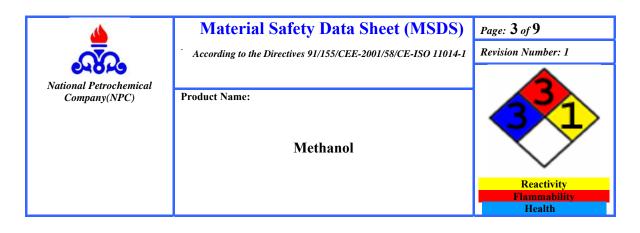
Other information:

Risk and Safety phrases are standardized phrases for Hazardous Substances. Risk phrases indicate a general description of the physicochemical, environmental and health hazards of a substance. Safety phrases give information for safe storage, handling, disposing, personal protection and first aid.

4. FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor. NEVER induce swallowing in an unconscious person. Eye wash facilities and water shower should be available In case of exposure by inhalation: Event the contaminated area. Breathe deeply. See a doctor.

Flush eyes (while eyelids are hold In case of splashes or contact with eyes: apart) with plenty of water for at least 15 minutes. Keep patient calm. In case of swallowing: **Contact a doctor or Poisons** Note of physician: **Information Centre. Doctor** should watch for toxic effect which may be delayed, including chemical pneumonitis. Apply antidote treatment with ethanol. Central nervous system depression, and acidosis from methanol metabolites, including formaldehyde liver function and optic nerve, and other effects should be treated symptomatically. In case of contact with skin: **Remove contaminated clothing** (with methanol) and flush affected area with water. See doctor if irritation develops. Wash contaminated clothing before reuse.



5. FIRE FIGHTING MEASURES

Hazchem Code:



2WE. Highly flammable. FLAMMABLE Auto-ignition temperature:385[°]C (NFPA

1978), 470[°]C(Kirk-Other

Suitable extinguishing media:

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:

Special protective equipment for fire fighting :

Other information:

1981:ullmann,1975) LEL:6% UEL:36% (NFPA 1978) Dry chemical, carbon dioxide, foam or water fog. For large fires water jet is ineffective. Use water fog to cool intact containers and nearby storage areas. .Eliminate all ignition sources including cigarettes, open flame, sparks, heaters etc. at dispensing earth containers. Methanol vapors may form explosive mixtures with air. Toxic gases such as carbon oxides, hydrocarbons are produced after decomposition at high temperature and combustion. Full face, positive pressure, selfcontained breathing apparatus and suitable protective clothing. Do not walk through spilled products as it may be on fire and not visible. Flame of methanol is almost invisible in daylight. Remain upwind and notify those downwind of hazard. **Concentration of greater than 25%** methanol in water can be ignited.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Environmental precautions:

Methods for cleaning up and disposal:

Refer to section 8

Ventilate and clear area of all unprotected personnel. Eliminate all ignition sources. Absorb spill with sand or similar, collect and place in sealable containers for disposal

۵.	Material Safety Data Sheet (MSDS)	Page: 4 of 9
	According to the Directives 91/155/CEE-2001/58/CE-ISO 11014-1	Revision Number: 1
ORONO National Petrochemical Company(NPC)	Product Name: Methanol	Reactivity Flammability Health

Other information:

Contact emergency services. Wear splashproof goggles, gloves, organic vapor respirator, coveralls and boots. Prevent soil and water pollution. Plug the leak. Collect the spilled methanol using explosion proof pumps, or dilute with water to reduce fire danger.

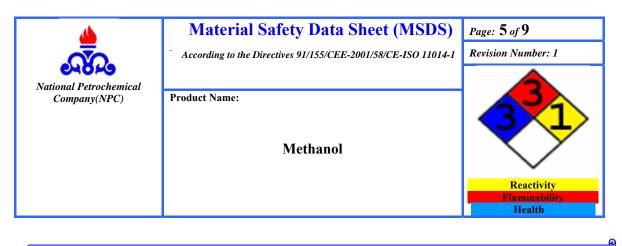
7. HANDLING AND STORAGE

The regulations relating to storage premises apply to workshop where the product is handled :

Handling:

Storage:

Use safe work practice to avoid eye or skin contact and inhalation. Prohibit smoking, drinking and eating while handling methanol containers or in contaminated area. Keep containers tightly closed. Use explosion lift trucks, try to reduce evaporation. Reduce fire hazard by applying safety measures. Store in cool, ventilated and possibly cool area. Keep away from oxidizing agents, acids, alkalis, direct sunlight, heat or ignition and food stuff. Containers should be labeled and grounded properly. Check regularly for leaks and spills. Anhydrous methanol is suitable for most metallic and plastic containers except made of lead and magnesium. Mild steel is recommended material for tank construction. Modern vessel containers are made of stainless steel. **Corrosion rates for several materials :** Cast iron, monel, Lead, Nickel: < 0.508 mm/year High silicon iron : < 0.051 mm/year Polyethylene : some attack Neoprene, phenolic Resins, Polyesters, Naterial Ruber, Butyl Rubber, satisfactory : Polyvinyl chloride ,Unplasticized : resistant

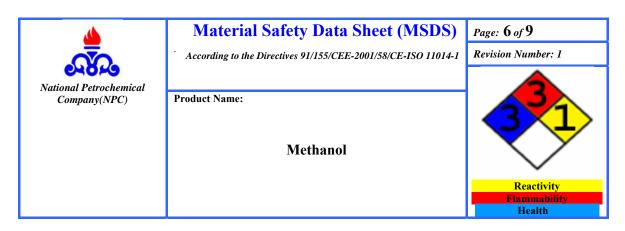


8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values: Exposure controls:	ES-TWA :200 ppm / ES-STEL : 250 ppm / WES-TWA : 200 ppm / VLE – 15 min. : 1000 ppm / odour threshold : 200 ppm (irritation at 1000 ppm) / Do not inhale vapours. Use explosion proof ventilation systems. Methanol vapours are heavier than air and may travel some distense to an invitien generate and flock heads
Personal protective equipment:	distance to an ignition source and flash back to leakage point .Keep vapour level below the recommended exposure standard. PVC apron, suitable goggle or face shield and neoprene gloves are recommended. In case of inhalation risk, wear a Type A respirator or air-line respirator.
Eye protection:	Use face shield and chemical splash mask or goggles.
Respiratory protection:	Use air respirator in case of exceeding exposure limits.
Hand protection:	Use gloves made o Butyl or Nitrile rubber.
Skin and body protection:	Use protective clothing made of Butyl or Nitrile rubber
Health measures:	In confined areas, explosion proof ventilation should maintain air borne concentration below permissible exposure limits. Sampling methods : NIOSH 2000 or OSHA 91
Environmental exposure controls:	See section 13.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information: Appearance (at 20°C): Colour: Odour: PH (at 20°C): Boiling point/range (°C): Flash point (°C): Flammability: Auto-ignition temperature: Explosive properties: Methanol is a liquid product. Clear liquid Colourless Slight alcohol odour N.D. 64.5°C 11(TCC) Flammable 385 °C 6 – 36 vol%



Oxidising properties: Vapour pressure (at50°C): Density (at 20°C): Solubility (at 20°C): None 535 hpa (at 20 °C : 127 hpa) 0.792 (relative) / relative vapour density :1.1 Soluble in : ethanol, ether, acetone, chloroform

solubility in fats: reacts with fats to form biodiesel 0.0006 pa.s Ratio to butyl acetate : 5.9 / to ether: 5.3

Other information:

Viscosity (40°C):

Evaporation rate:

Melting point : -97.8 °C

10. STABILITY AND REACTIVITY

Stability: Conditions to avoid:

Material to avoid:

Hazardous decomposition products:

Stable under normal conditions.

Heat, spark and ignition sources .

Oxidizing agents, acids, halogens, bases and amines. Carbon di & mono oxides and formaldehyde.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (methanol):



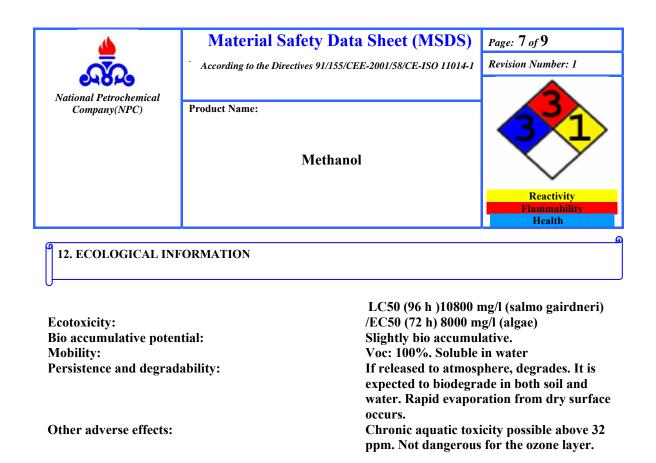
Sub chronic – chronic toxicity: Sensibilization: Carcinogenicity: Reproductive effects: Human experience:

Other information:

- LD₅₀, oral, rat (5628 mg.kg⁻¹):

- LD₅₀, inhalation rat (85 mg/l/4 h):
- LD₅₀, dermal rabbit (15800 mg.kg⁻¹):

Not listed Not listed Not listed Not listed Repeated exposure by inhalation or absorption: systemic poisoning, impaired vision and blindness Reported to cause birth defects in rats exposed to 2000 ppm.



13. DISPOSAL CONSIDERATIONS

Disposal of product:

Disposal of packaging:

Incineration is recommended. Waste materials should be disposed of in accordance with your municipal, state, provincial, and federal regulations. Dispose of in accordance with relevant local regulations.

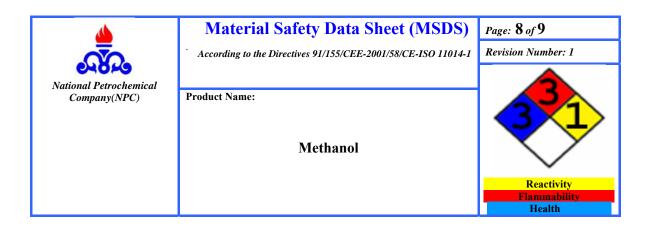
14. TRANSPORT INFORMATION

Land transport:

ADR/RID: (transport by road and rail) Packing group: II Maritime transport:

Air transport:

class :3 packing group : II danger label tanks : 3+6.1 danger label packaging : 3+6.1 **HAZCHEM :2WE Class:3(flammable liquids) HAZCHEM: 2WE** Class:3 sub risks : 3.1 packing group :II **MFAG: 19** EMS: F-E, S-D Class: 3 sub risks :6.1 packing : II packing instruction passenger aircraft : 305-y305 packing instruction cargo aircraft :307



15. REGULATORY INFORMATION

Hazardous label(s): Safety phrases: Risk phrases: Highly flammable , toxic S(01/02); S 07; S 16 ;S 36/37 ; S45 R 11 ;R23 /24 /25 ; R39 /23 /24/25

16. OTHER INFORMATION

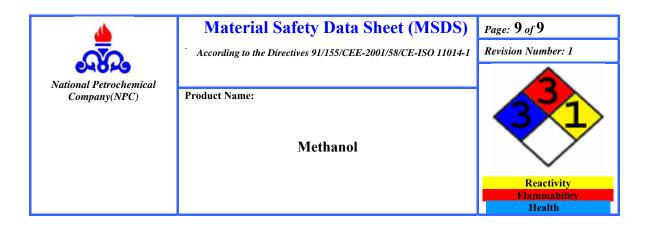
NOTE TO PHYSICIAN

After 40 minutes up to 72 hours, the symptoms of acute exposure to methanol, either through ingestion or breathing high airborne concentrations, could appear. Signs and symptoms are usually limited to central nerve symptom (CNS), eyes and gastrointestinal tract. Because of the initial CNS's effects of headache, vertigo, lethargy, and confusion, there may be an impression of ethanol intoxication. Blurred vision, decreased acuity and photophobia are common complains of the patients.

Treatment with ipecac or lavage is indicated in any patient presenting the symptoms within two hours of ingestion. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate is a more accurate measure of severity than serum methanol level. Treatment procedures are present at major hospitals and early collaboration with said hospitals is recommended.

Chemical data sheets available in many countries now contain codes for certain "risk phrases", shown as R23, R45 etc. These risk phrase codes have the following meanings:

- R11 Highly flammable.
- R23 Toxic by inhalation.
- R24 Toxic in contact with skin.
- R25 Toxic if swallowed.
- R39 Danger of very serious irreversible effects. Under EC legislation, data sheets available now contain codes for certain "safety phrases", shown as S1, S17 etc. These phrases are also extensively used elsewhere in the world. Safety phrase codes have the following meanings: S1 Keep locked up.
- S2 Keep out of the reach of children.
- S7 Keep container tightly closed.
- S16 Keep away from sources of ignition.
- S36 Wear suitable protective clothing.
- S37 Wear suitable gloves.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)



The contents and format of this MSDS are in accordance with EEC Commission Directive 2001/58/EC

Disclaimer of liability:

The information in this MSDS was obtained from different sources, which National Petrochemical Company (NPC) and Iran Petrochemical Commercial Company (IPCC) believe, are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, National Petrochemical Company (NPC) and Iran Petrochemical Commercial Company (IPCC) do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.