



MATERIAL SAFETY DATA SHEET

HydroPlus

REF : PPK/001/HydroPlus

Effective Date : SEP 2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

IDENTIFICATION OF THE SUBSTANCE : HydroPlus

CHEMICAL FAMILY : Methanol

PRODUCT DESCRIPTION : Clear colorless liquid with a faint odor similar to methyl alcohol

2. COMPOSITION / INFORMATION ON INGREDIENTS

HEALTH HAZARDOUS COMPONENTS (and /or CAS NUMBERS)	SYMBOL/R-PHRASE OR OEL	Wt %
METHANOL 67-56-1	T, R23/24/25, R39/23/24/25	62.0
WATER 7732-18-5		38%

3. HAZARDS IDENTIFICATION

Health Hazards

Toxic by inhalation, in contact with skin and if swallowed

Toxic : danger of very serious irreversible effects through inhalation, in contact with skin

and if swallowed.

Physical and Chemical Hazards / Fire and Explosion Hazards

- Extreme hazard. Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above the flash point
- Decomposes. Flammable/toxic gases will form upon decomposition. See Section 10 "STABILITY AND REACTIVITY".
- Static Discharge. Product can accumulate static charges which can cause an incendiary electrical discharge.

4. FIRST AID MEASURES

Inhalation

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

Skin Contact

Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

Eye Contact

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

5. FIRE-FIGHTING MEASURES

Fire Fighting Procedures

- Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak.
- Either allow fire to burn under controlled conditions or extinguish with alcohol type foam or dry chemical. Try to cover liquid spills with foam.
- Spill fires may be extinguished by flooding with large amounts of water.

Special Fire Precautions

- Respiratory and eye protection required for fire fighting personnel.
- See also Section 4 "First Aid Measures" as well as Section 10 "Stability And Reactivity".

Hazardous Combustion Products

No unusual.

6. ACCIDENTAL RELEASE MEASURES

Land Spill :

- Eliminate sources of ignition. Warn occupants of downwind areas of fire and explosion hazard. Prevent liquid from entering sewers, watercourses, or low areas.
- Keep public away. Shut off source if possible to do so without hazard. Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation. Take measures to minimize the effect on the ground water.
- Contain spilled liquid with sand or earth.
- Dilute contained spill with water.
- Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent. If liquid is too viscous for pumping, scrape up with shovels or pails and place in suitable containers for recycle or disposal.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See Section 4 "First Aid Measures" as well as Section 10 "Stability And Reactivity".

Water Spill

- Eliminate sources of ignition. Warn occupants and shipping in downwind areas of fire and explosion hazard and request them to stay clear.
 - Hose over spill area to effect dilution of water soluble material.
 - Consult an expert on disposal of any recovered material and ensure conformity to local disposal regulations.
 - See also Section 4 "First Aid Measures" and Section 10 "Stability And Reactivity"
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7. HANDLING AND STORAGE

Storage Temperature (DegC)	: Ambient
Transport Temperature (DegC)	: Ambient
Loading/Unloading Temperature (DegC)	: Ambient
Viscosity (cSt)	: 0.70

Storage/Transport Pressure (kPa) : Atmospheric
Electrostatic Accumulation Hazard ? Yes, use proper grounding procedure

Usual Shipping Containers : Drums, rail wagons

Materials and Coatings Suitable : Iron, Mild Steel, Stainless Steel

Materials and Coatings Unsuitable : Lead, Magnesium, Polystyrene, Perspex, Leathers,
PVC, Zinc Coatings, Synthetic Resins

Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Storage / Handling, General Notes

- Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated place away from incompatible materials.
- Do Not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight.
- Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.
- DO NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

Additional Warnings

Container remains hazardous when empty. Continue to observe all precautions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Control Measures / Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures or otherwise to maintain ambient concentration below the recommended threshold exposure limits. Use explosion-proof ventilation equipment.

OCCUPATIONAL EXPOSURE LIMITS

This product consists of a single substance with the following recognized or recommended OEL value(s) :

Methyl alcohol;

TWA : 200 ppm (262 mg/m³) STEL : 250 ppm (328 mg/m³) (SKIN), ACGIH (2002).

PERSONAL PROTECTION

GENERAL ADVICE

The use and choice of Personal Protection equipment is related to the hazard of the product, the workplace, and the way the product is handled. In general, we recommend as a minimum safety precaution that safety glasses with side-shields and work clothes protecting arms, legs and body be used. In addition, any person visiting an area where this product is handled or processed should at least wear safety glasses with side-shields.

SPECIAL ADVICE

Based on and limited to Aik Moh's experience of this product as such, the following special advice is believed to provide satisfactory protection for the industrial user or handler.

RESPIRATORY PROTECTION

Where concentrations in air may exceed the limits given in this section, it is recommended to use an air supplied breathing apparatus to protect from overexposure by inhalation.

HAND PROTECTION

When handling this product, it is recommended to wear chemical resistant gloves. The choice of suitable protective gloves depends on work conditions and what chemicals are handled, but we have positive experience with gloves made of Butyl or Viton (TM). Gloves should be replaced immediately if sign of degradation is observed.

EYE PROTECTION

When handling this product, it is recommended to wear splash resistant goggles and a face shield.

SKIN/BODY PROTECTION

When handling this product, it is recommended to wear a chemical resistant apron, jacket and rubber boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

These are indicative values only. Please refer also to the product certificate of analysis.

Physical State : Liquid

SPECIFIC GRAVITY @ 20°C : 0.891

CONDUCTIVITY : 0.25

10. STABILITY AND REACTIVITY

Hazardous Polymerization? No
Conditions to Avoid Polymerization : Not Applicable

Stability : Stable
Conditions to Avoid Instability Not Applicable

Materials and Conditions to Avoid (Incompatibility) :
Inorganic acids, aldehydes, alkylene oxides, halogens, acid anhydrides, monomers, polymerizable esters, strong oxidizing agents

Hazardous Decomposition Products:
Formaldehyde (Toxic)

11. TOXICOLOGICAL INFORMATION

Acute

Inhalation:

- Vapor concentrations above recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.
- This product contains methyl alcohol. Vapor inhalation and/or skin absorption can cause central nervous system effects and blindness.

Skin Contact:

- Moderate systemic toxicity through the skin.
- Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
- Methyl alcohol may be absorbed through the skin which can contribute to damage of the optic nerve resulting in permanent visual changes, loss of vision or total blindness.

Eye Contact:

- Severely irritating. If not removed promptly, will injure eye tissue, which may result in permanent Damage.

Ingestion:

- Moderately toxic.
- Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting

may cause bronchopneumonia or pulmonary edema.

- The main hazard of Methyl Alcohol arises from its misuse as a drinking substitute for Ethyl Alcohol. As little as 15 ml. (1/2 oz) of 40% Methyl Alcohol has caused death. Sublethal doses of Methyl Alcohol may damage the optic nerve which can result in permanent visual changes, including blindness.

Additional information is available on special request

12. ECOLOGICAL INFORMATION

Environmental Mobility

This product is water soluble and is expected to remain primarily in water.

Environmental Degradability

This product is expected to biodegrade rapidly and be "readily" Biodegradable according to OECD guidelines.

This substance is expected to be removed in a wastewater treatment facility.

Ecotoxicity and Bioaccumulation

Low acute toxicity to aquatic organisms is expected.

Long term adverse effects to aquatic organisms are not expected.

13. DISPOSAL CONSIDERATIONS

The following advice only applies to the product as supplied.

Combination with other materials may well indicate another route of disposal. If in doubt, contact local supplier or local Authorities.

Empty drums should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor.

Care should in any case be taken to ensure compliance with national and local regulations.

This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers.

This product is ashless and can be burned directly in appropriate equipment.

14. TRANSPORT INFORMATION

LAND

CLASS : 3 PG : II UN NUMBER : 1230
HAZCHEM CODE : 2WE SUBSIDIARY RISK : 6.1

TRANSPORT DOCUMENT NAME :
METHANOL, CLASS 3, UN 1230. PG II, (12 DegC c.c.), (6.1)

SEA - IMDG (PACKAGED GOODS AND BLCs)

CLASS : 3 PG : II UN NUMBER : 1230
MARINE POLLUTANT : NO EMS NUMBER : F-E, S-D
RISK LABEL : 3, 6.1 SUBSIDIARY RISK : 6.1

TRANSPORT DOCUMENT NAME :
METHANOL, CLASS 3, UN 1230. PG II, (12 DegC c.c.), (6.1)

AIR (ICAO / IATA)

CLASS : 3 PG : II UN NUMBER : 1230

PROPER SHIPPING NAME :
METHANOL

15. REGULATORY INFORMATION

Classification and Labelling According to EC Directives

Classification / Symbol : TOXIC / T

Classification / Symbol : HIGHLY FLAMMABLE / F

Governing Directive :

Dangerous Substances Directive 67/548/EC, as modified.

Label Name : METHANOL

Nature of Special Risk

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 Advice

S07/09 Keep container tightly closed and in a well ventilated place
S16 Keep away from sources of ignition-No Smoking
S33 Take precautionary measures against static discharges
S36/37 Wear suitable protective clothing and gloves

S43B In case of fire use sand, earth, chemical powder or alcohol type foam
S45 In case of accident or if you feel unwell, seek medical advice
immediately
(show the label where possible)

16. OTHER INFORMATION

This 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. Such information is to the best of manufacturer company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy him self as to the suitability and completeness of such information for his own particular use.

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