

MATERIAL SAFETY DATA SHEET**Product Trade Name:** MO-85 LP**Revision Date:** 09-Oct-2014**Revision Number:** 10**SECTION 1. Product and Company Identification****Product Identifier**

Product Trade Name: MO-85 LP
Synonyms: None
Chemical Family: Organic acid
Internal ID Code HM006159

Product Use**Application:** Gelling Agent**Manufacturer's Name and Contact Details**

Name and Address Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

Emergency Telephone Number (281) 575-5000**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

SECTION 2. Hazard(s) Identification**WHMIS Classification****WHMIS Hazard Class** E Corrosive Material**WHMIS Symbol(s)****Summary of hazards of the product****Hazard Overview** May cause eye, skin, and respiratory burns. May be harmful if swallowed.**SECTION 3: Composition/information on Ingredients**

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
phosphoric acid, mixed esters with alkyl and aryl alcohols	Proprietary	60 - 100%	8980	September 30, 2014

SECTION 4. First aid measures

Description of first aid measures**Inhalation**

If inhaled, remove to fresh air. If not breathing give artificial respiration (AR), preferably mouth-to-mouth. If breathing is difficult, oxygen should be given by trained personnel. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 30 minutes while holding eyelids open and get medical attention immediately after flushing.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately. Remove contaminated clothing and launder before reuse.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If breathing has stopped, trained personnel should begin rescue breathing / artificial respiration (AR) immediately. If the heart has stopped, trained personnel should begin CPR immediately. Obtain medical attention immediately. If vomiting occurs naturally, have victim lie on their side, in recovery position, to reduce risk of aspiration, and obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory burns.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically

SECTION 5. Fire Fighting Measures**Extinguishing media****Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture**Special Exposure Hazards**

Decomposition in fire may produce toxic gases.

Advice for firefighters**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Hazardous combustion products

Oxides of phosphorus. Carbon monoxide and carbon dioxide.

SECTION 6. Accidental release measures**Personal precautions and emergency procedures****Protective Equipment**

Use appropriate protective equipment.

Environmental Precautionary Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

SECTION 7. Handling and Storage

Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Conditions for safe storage and Incompatible materials for storage

Store away from alkalis. Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 24 months.

SECTION 8: Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
phosphoric acid, mixed esters with alkyl and aryl alcohols	Proprietary	Not available	Not available

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area.

Personal Protective Equipment (PPE)**Respiratory Protection**

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Not normally necessary.

Hand Protection

Impervious rubber gloves.

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

SECTION 9. Physical and Chemical Properties
--

Information on basic physical and chemical properties

Physical State: Liquid

Color: Amber

Odor: Alcohol

Odor Threshold: No information available

Property**Values**

Remarks/ - Method

pH:

1-2

pH Concentration of Solution:

10%

Freezing Point/Range

No information available.

Melting Point/Range

No information available

Boiling Point/Range (C):

No information available.

Flash Point/Range (C):

165 °C

Flash Point Method:

PMCC

Autoignition Temperature (C):

No information available.

Flammability Limits in Air - Lower (%):

No information available.

Flammability Limits in Air - Upper (%):

No information available.

Evaporation Rate (Butyl Acetate=1):

< 1

Vapor Pressure @ 20 C (mmHg):

< 1

Vapor Density (Air=1):

No information available.

Specific Gravity @ 20 C (Water=1):

1.0132

Solubility in Water (g/100ml):

Insoluble

Solubility in other solvents

No information available.

Partition Coefficient/n-Octanol/Water:	No information available.
Decomposition Temperature (C):	No information available.
Viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other Information

Molecular Weight (g/mole):	No information available.
VOC Content (%)	No information available

SECTION 10. Stability and Reactivity

Conditions of Reactivity

Conditions to Avoid	None anticipated
Hazardous Polymerization:	Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers. Strong alkalis.

Hazardous Decomposition Products

Oxides of phosphorus. Carbon monoxide and carbon dioxide.

SECTION 11. Toxicological Information
--

Routes of entry

Eye or skin contact, inhalation.

Information on Toxicological Effects**Acute effects from exposure**

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation. May cause eye burns.
Skin Contact	Causes severe skin irritation. May cause skin burns.
Ingestion	Causes burns of the mouth, throat and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic effects from exposure

Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
--	--

Irritancy of product

Irritation	Corrosive to eyes Corrosive to skin
-------------------	-------------------------------------

Sensitization of product

Sensitization	Not confirmed to cause skin or respiratory sensitization.
----------------------	---

Mutagenicity

Mutagenic Effects	Not regarded as mutagenic.
--------------------------	----------------------------

Carcinogenicity

Carcinogenic Effects	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, or OSHA.
-----------------------------	--

Reproductive toxicity

Reproductive Toxicity

This product does not contain any known or suspected reproductive hazards

Teratogenicity/embryotoxicity

Teratogenic

Not a confirmed teratogen or embryotoxin.

Toxicologically synergistic material Not available**Acute Toxicity**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
phosphoric acid, mixed esters with alkyl and aryl alcohols	Proprietary	No data available	No data available	No data available

SECTION 12. Ecological Information

Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
phosphoric acid, mixed esters with alkyl and aryl alcohols	Proprietary	No information available	No information available	No information available	No information available

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

SECTION 13. Disposal Considerations
--

Disposal Method

Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

SECTION 14. Transport Information
--

Canadian TDG u10

UN Number:

UN3265

UN Proper Shipping Name:

Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Phosphate Esters)

Transport Hazard Class(es):

8

Packing Group:

III

EMS: EmS F-A, S-B

IATA/ICAO

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Phosphate Esters)
Transport Hazard Class(es): 8
Packing Group: III

IMDG/IMO

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Phosphate Esters)
Transport Hazard Class(es): 8
Packing Group: III
EMS: EmS F-A, S-B

Special Precautions for User: None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

SECTION 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

WHMIS Hazard Class E Corrosive Material

WHMIS Symbol(s)

**US Regulations**

US TSCA Inventory Product contains one or more components not listed on the inventory.

SECTION 16. Other Information

Preparation Information

Prepared By Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 09-Oct-2014

Not applicable

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****