

FORESTALL-LQ-(MH)

Version 1.6	Revision Date: 05/03/2019	Product code: HA47566	Date of last issue: 11/02/2018	Print Date : 05/03/2019
			Date of first issue: 11/20/2014	

SECTION 1. IDENTIFICATION

Product name : FORESTALL-LQ-(MH)

Manufacturer or supplier's details

Company name of supplier : Croda Inc
Address : 300 A Columbus Circle
Edison, NJ 08837-3907
US
Telephone : (732) 417-0800
Telefax : (732) 417-0804
Emergency telephone : USA: 24 Hour Emergency Response Information CHEMTREC
toll free: 1-800-424-9300; direct/international: 1-703-527-3887.
CANADA: CANUTEC 1-888-CAN-UTEC (226-8832), 613-996-
6666 or *666. EUROPE: 00 32 3575 5555. ASIA PACIFIC -
excl. China: +65 6542-9595. CHINA: +86 816-635 2206.
AUSTRALIA: +61 2 7808 3390. SOUTH AFRICA: +32 3 575
55 55. BRASIL:Suatrans 0800 707 7022 / 0800 707 1767.
LATAM: Suatrans (+55) 11 98149-0850 / (+55) 19 3833-5300.
INDIA: +91 22 30948601/2. JAPAN: +65 6542 9595 (24 時間
日本語対応無料通話, シンガポール). TÜRKIYE: Sağlık Ba-
kanlığı Ulusal Zehir Merkezi - 114

Recommended use of the chemical and restrictions on use

Recommended use : Raw material

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Oral) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.

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H315 Causes skin irritation.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

May cause irritation of respiratory tract.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
N-Ethyl-N-Soya Morpholinium Ethosulphate	61791-34-2	>= 30 - <= 40

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

If inhaled : If breathed in, move person into fresh air.
If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If eye irritation persists, consult a specialist.

If swallowed : If large quantities of this material are swallowed, call a

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Most important symptoms and effects, both acute and delayed : physician immediately.
: See section 2 and 11

SECTION 5. FIRE-FIGHTING MEASURES**Flammable properties**

Flash point : > 300 °F / > 149 °C

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.

Specific extinguishing methods : Standard procedure for chemical fires.

Further information : Use water spray to cool unopened containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
Sweep up and shovel into suitable containers for disposal.

SECTION 7. HANDLING AND STORAGE

Local/Total ventilation : Ensure adequate ventilation.
Do not use in areas without adequate ventilation.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with skin and eyes.

Conditions for safe storage : Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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Materials to avoid : No special restrictions on storage with other products.

Further information on storage stability : Stable under recommended storage conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.

Hand protection

Remarks : Impervious gloves
Eye protection : Tightly fitting safety goggles
Face-shield
Skin and body protection : Impervious clothing
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Color : red brown
Odor : No data available
Odor Threshold : No data available

pH : 7 - 8
Method: 100%

Melting point : No data available

Boiling point : > 212 °F / > 100 °C

Flash point : > 300 °F / > 149 °C

Vapor pressure : No data available

Relative density : approximately 1.01 (77 °F / 25 °C)

Density : No data available

Solubility(ies)
Water solubility : soluble

Solubility in other solvents : soluble
Solvent: Acetone

soluble
Solvent: toluene

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soluble
Solvent: lower alcohols

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : approximately 1,000 mPa.s (77 °F / 25 °C)

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : None known.
Incompatible materials : Strong oxidizing agents
Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Ammonia
Nitrogen oxides (NOx)
Sulfur oxides
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat): 1,670 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5.04 mg/ml
Exposure time: 4 h
Test atmosphere: dust/mist
Test substance: 1%
Assessment: No mortality observed at this dose.

Acute dermal toxicity : No data available:

Components:**N-Ethyl-N-Soya Morpholinium Ethosulphate:**

Acute oral toxicity : LD50 Oral (Rat): 1,670 mg/kg

Skin corrosion/irritation**Product:**

Assessment : Irritating to skin.
Method : EpiDerm Skin Model
Result : Moderate skin irritation
Test substance : 100%

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Components:**N-Ethyl-N-Soya Morpholinium Ethosulphate:**

Species : Rabbit
Result : Causes severe burns.

Serious eye damage/eye irritation**Product:**

Result : Severe eye irritation
Method : In vitro study
Test substance : 10%

Components:**N-Ethyl-N-Soya Morpholinium Ethosulphate:**

Species : Bovine cornea
Assessment : Risk of serious damage to eyes.
Method : OECD Test Guideline 437
GLP : yes
Test substance : 35%

Respiratory or skin sensitization**Product:**

Remarks : No data available

Components:**N-Ethyl-N-Soya Morpholinium Ethosulphate:**

Routes of exposure : Dermal
Species : Guinea pig
Assessment : Based on available data, the classification criteria are not met.
Method : Maximization Test
Result : The results of a test on guinea pigs showed this substance to be a weak skin sensitizer.

Germ cell mutagenicity**Product:**

Genotoxicity in vitro : Remarks: No data available

Components:**N-Ethyl-N-Soya Morpholinium Ethosulphate:**

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium and Escherichia coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471

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Result: negative

Germ cell mutagenicity - Assessment : Not mutagenic in Ames Test.

Carcinogenicity**Product:**

Test substance : No data available

Reproductive toxicity**Product:**

Reproductive toxicity - Assessment : No data available

STOT-single exposure**Product:**

Assessment : No data available

STOT-repeated exposure**Product:**

Assessment : No data available

Aspiration toxicity**Product:**

No data available

Further information**Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**Toxicity to fish :
Remarks: No data available**Components:****N-Ethyl-N-Soya Morpholinium Ethosulphate:**Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.09 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

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Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.021 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.016 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Persistence and degradability**Product:**

Biodegradability : Biodegradation: 7 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Not readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects**Product:**

Additional ecological information : There is no data available for this product.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.
Contaminated packaging : Empty remaining contents.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations**

UNRTDG

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UN number : UN 3082
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
 (N-Ethyl-N-Soya Morpholinium Ethosulphate)
 Class : 9
 Packing group : III
 Labels : 9

IATA-DGR

UN/ID No. : UN 3082
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
 (N-Ethyl-N-Soya Morpholinium Ethosulphate)
 Class : 9
 Packing group : III
 Labels : Miscellaneous
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964
 Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (N-Ethyl-N-Soya Morpholinium Ethosulphate)
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

Special precautions for user

Remarks : DOT - Regulated in bulk containers (>119 gallons) - only.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

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SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations**Pennsylvania Right To Know**

Water	7732-18-5
N-Ethyl-N-Soya Morpholinium Ethosulphate	61791-34-2

New Jersey Right To Know

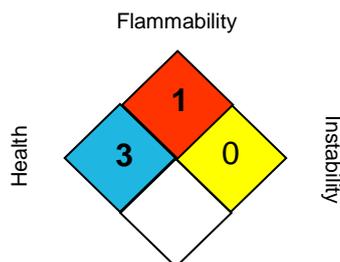
Water	7732-18-5
N-Ethyl-N-Soya Morpholinium Ethosulphate	61791-34-2

California Prop. 65

WARNING: This product can expose you to chemicals including diethyl sulfate, bis (2-chloroethyl) ether, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

TSCA	: All chemical substances in this product are listed on the TSCA Inventory.
REACH	: On the inventory, or in compliance with the inventory, Registered for import by authorized entities only.
DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

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11/20/2014**SECTION 16. OTHER INFORMATION****Further information****NFPA:**

Special hazard.

HMIS II:

HEALTH	3
FLAMMABILITY	1
Reactivity	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification 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; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG -

SAFETY DATA SHEET

CRODA

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United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Material Safety Data Sheet is correct to the best of our 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.

US / Z8