SAFETY DATA SHEET

Hostagel PH1

Substance key: 000000411792 Revision Date: 05/12/2015
Version : 3 - 1 / USA Date of printing :05/12/2015

SECTION 1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Identification of the company:</th>
<th>Clariant Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4000 Monroe Road</td>
</tr>
<tr>
<td></td>
<td>Charlotte, NC, 28205</td>
</tr>
<tr>
<td>Telephone No.:</td>
<td>+1 704-331-7000</td>
</tr>
</tbody>
</table>

Information of the substance/preparation:
Product Safety 1-704-331-7710
Emergency tel. number: +1 800-424-9300 CHEMTREC

Trade name: Hostagel PH1
Material number: 240111

Primary product use: Viscosifier
Chemical family: Blend of amine components

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
- Flammable liquids: Category 3
- Acute toxicity (Oral): Category 4
- Skin corrosion: Category 1B
- Serious eye damage: Category 1

GHS Label element
- Hazard pictograms:
  - Fire
  - Corrosion
  - Caution

Signal word: Danger

Hazard statements:
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.

Precautionary statements:
- Prevention:
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - 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.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
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 or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P370 + P378In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

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

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol, 2,2'-(9-octadecenylimino)bis-</td>
<td>25307-17-9</td>
<td>60 - 80</td>
</tr>
<tr>
<td>Octadecyltrimethylammonium chloride</td>
<td>112-03-8</td>
<td>&lt; 20</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>67-63-0</td>
<td>&lt; 4</td>
</tr>
<tr>
<td>Propylene Glycol</td>
<td>57-55-6</td>
<td>&gt;= &lt; 10</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice: Remove/Take off immediately all contaminated clothing. Get medical advice/ attention if you feel unwell.

If inhaled: Move the victim to fresh air. Give oxygen or artificial respiration if needed.
Get immediate medical advice/attention. Never give anything by mouth to an unconscious person.

In case of skin contact: 
Remove contaminated clothing. Flush all affected areas with large amounts of water for at least 15 minutes. Seek medical attention immediately.

In case of eye contact: 
Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.

If swallowed: 
Do NOT induce vomiting. Call a physician immediately.

Most important symptoms and effects, both acute and delayed: 
The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

Notes to physician: None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media: 
- Water spray jet
- Alcohol-resistant foam
- Dry powder
- Carbon dioxide (CO2)

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: 
In case of fires, hazardous combustion gases are formed:
- Carbon monoxide (CO)
- Nitrogen oxides (NOx)
- Hydrogen chloride

Further information: Exercise caution when fighting any chemical fire. Use NIOSH approved self-contained breathing apparatus and full protective clothing.

Special protective equipment for firefighters: Self-contained breathing apparatus

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: 
Wear suitable protective equipment. Ensure adequate ventilation. Remove all sparking devices or ignition sources. Wearing appropriate personal protective equipment, contain spill,
ventilate area of spill or leak. collect into suitable container. Rinse residual with water. Do not allow to contaminate water sources, sewers or soil.

Environmental precautions: The product should not be allowed to enter drains, water courses or the soil.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Treat recovered material as described in the section "Disposal considerations".

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Take measures to prevent the build up of electrostatic charge.

Advice on safe handling: Store in a well ventilated area away from heat, sparks or open flames. Keep containers tightly closed when not in use. Wear proper protective equipment.

Technical measures/Precautions: Store in original container. Keep container closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures: Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.

Personal protective equipment

Respiratory protection: If airborne concentrations pose a health hazard, become irritating or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29 CFR 1910.134

Hand protection

Remarks: Butyl Rubber, PVC Or Neoprene.

Eye protection: Tightly fitting safety goggles
Face-shield

Skin and body protection: Protective clothing to minimize skin contact should be worn. Chemically resistant safety shoes. Wash contaminated clothing with soap and water and dry before reuse. Safety showers and eyewash stations should be provided in all areas where this material is handled.
Protective measures: Observe the usual precautions for handling chemicals.

Hygiene measures: Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: paste

Colour: yellow to brownish

Odour: amine-like

Odour Threshold: not tested.

pH: 8 - 9, Concentration: 10 g/l (20 °C) Method: DIN EN 1262

Melting point: approx. 15 °C Method: ISO 3016

Boiling point: approx. 82 °C not determined Data relate to solvent

Flash point: approx. 58 °C Method: DIN/ISO 2592 (open cup)

Evaporation rate: not tested.

Upper explosion limit: 12.7 %(V) Data relate to solvent

Lower explosion limit: 2 % (V) Data relate to solvent

Vapour pressure: 43 mbar (20 °C) Data relate to solvent

Relative vapour density: 2.1 The data refer to the solvent

Density: approx. 0.905 g/cm3 (25 °C) Method: DIN 51757

Bulk density: Not applicable

Solubility(ies)

Water solubility: miscible

Solubility in other solvents: not tested. Solvent: fat

Partition coefficient: n-: not tested.
octanol/water

Auto-ignition temperature  : 425 °C  
Data relate to solvent

Decomposition temperature : > 350 °C  
Method: DSC  
Information refers to the main component.

Viscosity  
Viscosity, dynamic : approx. 130 mPa.s (approx. 25 °C)  
Method: DIN 53015

Viscosity, kinematic : not tested.

Explosive properties : no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.  
Stable

Conditions to avoid : Keep away from heat.  
Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials : not known

Hazardous decomposition products : When handled and stored appropriately, no dangerous decomposition products are known

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Ingestion
Inhalation

Acute toxicity

Product:
Acute inhalation toxicity : Remarks: not tested.

Components:

Propan-2-ol:  
Acute oral toxicity : LD50 (Rat): 5,280 mg/kg
Acute inhalation toxicity: LC50 (Rat): 72.6 mg/l
Exposure time: 4 h

Acute dermal toxicity: LD50 (Rabbit): 12,800 mg/kg

Propylene Glycol:
Acute oral toxicity: LD50 (Rat, male and female): 22,000 mg/kg
Method: Other
GLP: no

Acute inhalation toxicity: LC50 (Rabbit): > 317.042 mg/l
Exposure time: 2 h
Method: Other
GLP: no

Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg
Method: Other
GLP: no

Skin corrosion/irritation

Product:
Remarks: not tested.

Components:
Propylene Glycol:
Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: No information available.

Serious eye damage/eye irritation

Product:
Remarks: not tested.

Components:
Propylene Glycol:
Species: rabbit eye
Result: non-irritant
Method: OECD Test Guideline 405
GLP: No information available.

Respiratory or skin sensitisation

Product:
Remarks: not tested.
Components:

Propylene Glycol:
- Test Type: Guinea pig maximization test
- Exposure routes: Skin contact
- Species: Guinea pig
- Method: OECD Test Guideline 406
- Result: Does not cause skin sensitisation.
- GLP: No information available.

Test Type: Mouse local lymphnode assay
- Exposure routes: Skin contact
- Species: Mouse
- Method: OECD Test Guideline 429
- Result: Does not cause skin sensitisation.
- GLP: No information available.

Germ cell mutagenicity

Product:
- Germ cell mutagenicity - Assessment: No information available.

Components:

Propylene Glycol:
- Genotoxicity in vitro: Test Type: Ames test
  - Species: Salmonella typhimurium
  - Concentration: <= 10 mg/plate
  - Metabolic activation: with
  - Method: Ames test
  - Result: negative
  - GLP: No information available.

  - Test Type: Chromosome aberration test in vitro
    - Species: Cultured peripheral human lymphocytes
    - Concentration: 7.4 - 3810 µg/ml
    - Metabolic activation: with and without
    - Method: OECD Test Guideline 473
    - Result: negative
    - GLP: yes

Genotoxicity in vivo: Test Type: Chromosome Aberration Test
- Species: Rat (male)
- Strain: Sprague-Dawley
- Cell type: Bone marrow
- Application Route: oral (gavage)
- Exposure time: 6 - 24 - 48 h
- Dose: 30 - 2500 - 5000 mg/kg
- Method: Other
- Result: negative
- GLP: no

Test Type: Chromosome Aberration Test
Species: Mouse (male)
Cell type: Erythrocyten
Application Route: Intraperitoneal injection
Exposure time: 18 h
Dose: 2500-5000-10000-15000 mg/kg
Method: Other
Result: negative
GLP: No information available.

Germ cell mutagenicity - Assessment: It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Carcinogenicity

Product:
Carcinogenicity - Assessment: No information available.

Components:
Propylene Glycol:
Carcinogenicity - Assessment: Not classifiable as a human carcinogen.

IARC Not listed
OSHA Not listed
NTP Not listed

Reproductive toxicity

Product:
Reproductive toxicity - Assessment: No information available.

No information available.

Components:
Propylene Glycol:
Effects on fertility: Test Type: Two generation study
Species: Mouse
Sex: male and female
Dose: 1820 - 4800 - 10100 mg/kg
Exposure time: 126 d
CD1
7 d
7 d
NOAEL: 10,100 mg/kg,
F1: 10,100 mg/kg,
F2: 10,100 mg/kg,
Effects on foetal development

Species: Mouse
Application Route: oral (gavage)
Exposure time: gestation day 6-15
Dose: 52 - 520 - 10400 mg/kg
Group: yes
10,400 mg/kg
52 mg/kg
Number of exposures: daily
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment
No reproductive toxicity to be expected.
No teratogenic effects to be expected.

STOT - single exposure

Product:
Remarks: not tested.

Components:
Propylene Glycol:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Product:
Remarks: not tested.

Components:
Propylene Glycol:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:
Remarks: not tested.

Components:
Propylene Glycol:
Species: Rat, male and female
NOAEL: 1,700 - 2,100 mg/kg
Application Route: oral (feed)
Exposure time: 2 a
Number of exposures: daily
Dose: 200-2100 mg/kg
Aspiration toxicity

**Product:**
no data available

**Components:**

**Propylene Glycol:**
No aspiration toxicity classification

Experience with human exposure

**Product:**
General Information : The possible symptoms known are those derived from the labelling (see section 2).

Further information

**Product:**
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

**Product:**

- **Toxicity to fish**
  - Remarks: not tested.

- **Toxicity to daphnia and other aquatic invertebrates**
  - Remarks: not tested.

- **Toxicity to algae**
  - Remarks: not tested.

- **Toxicity to bacteria**
  - Remarks: not tested.

**Components:**

- **Ethanol, 2,2'-(9-octadecenylimino)bis-**
  - M-Factor (Acute aquatic toxicity): 10
  - M-Factor (Chronic aquatic toxicity): 1

- **Propan-2-ol:**
  - Remarks: Test data for the substance are not available.

- **Propylene Glycol:**
  - **Toxicity to fish**
    - LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
      - Exposure time: 96 h
      - Test Type: static test
      - Analytical monitoring: yes
      - Method: Other
      - GLP: no

  - **Toxicity to daphnia and other aquatic invertebrates**
    - LC50 (Mysidopsis bahia (opossum shrimp)): 18,800 mg/l
      - Exposure time: 96 h
      - Test Type: static test
      - Analytical monitoring: yes
      - Method: Other
      - GLP: yes

  - **Toxicity to algae**
    - EC50 (Pseudokirchneriella subcapitata (green algae)): 19,000 mg/l
      - End point: Growth rate
      - Exposure time: 96 h
      - Test Type: static test
      - Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)):
15,000 mg/l
End point: Growth rate
Exposure time: 14 d
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity):
Chronic Toxicity Value (Fish): 2,500 mg/l
Exposure time: 30 d
End point: Other
Method: Other
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC (Ceriodaphnia spec.): 13,020 mg/l
Exposure time: 7 d
End point: Reproduction rate
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: No information available.

Toxicity to bacteria:
NOEC (Pseudomonas putida): > 20,000 mg/l
End point: Growth rate
Exposure time: 18 h
Test Type: aquatic
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to soil dwelling organisms:
Remarks: The study is not necessary from a scientific perspective.

Plant toxicity:
Remarks: The study is not necessary from a scientific perspective.

Sediment toxicity:
Remarks: The study is not necessary from a scientific perspective.

Toxicity to terrestrial organisms:
Remarks: The study is not necessary from a scientific perspective.

**Persistence and degradability**

**Product:**
Biodegradability: Remarks: not tested.
Components:

**Propan-2-ol:**
- Biodegradability: Result: Readily biodegradable
  - Biodegradation: 95 %

**Propylene Glycol:**
- Biodegradability: aerobic
  - Inoculum: activated sludge, domestic
  - Concentration: 100 mg/l ThOD
  - BOD in % of theoretical OD
  - Result: Readily biodegradable
  - Biodegradation: 100 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301F
  - GLP: yes

  aerobic
  - Inoculum: activated sludge, domestic
  - Concentration: 50.3 mg/l
  - CO2 formation in % of theoretical value
  - Result: Readily biodegradable
  - Biodegradation: 90.6 %
  - Exposure time: 64 d
  - Method: OECD Test Guideline 306
  - GLP: yes

Bioaccumulative potential

**Product:**
- Bioaccumulation: Remarks: not tested.

Components:

**Propan-2-ol:**
- Bioaccumulation: Remarks: Test data for the substance are not available.

**Propylene Glycol:**
- Bioaccumulation: Bioconcentration factor (BCF): 0.09
  - Method: calculated
  - GLP: no

Mobility in soil

**Product:**
- Distribution among environmental compartments: Remarks: not tested.

Components:

**Propan-2-ol:**
- Distribution among environmental compartments: Remarks: Test data for the substance are not available.
Propylene Glycol:
Distribution among environmental compartments: Adsorption/Soil
Medium: water - soil
log Koc: 0.46
Method: other (calculated)

Other adverse effects
Product:
Additional ecological information: The classification was made by the conventional (calculation) method of the CLP Regulation (EC) No 1272/2008. This information is not available.

Components:
Propan-2-ol:
Results of PBT and vPvB assessment: Remarks: no data available
Additional ecological information: slightly water endangering

Components:
Propylene Glycol:
Environmental fate and pathways: not available
Results of PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
Additional ecological information: Do not allow to enter ground water, waterways or waste water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste Code: NONE

Waste from residues: Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

Contaminated packaging: Packaging that cannot be cleaned should be disposed of as product waste.

SECTION 14. TRANSPORT INFORMATION
DOT Regulation:
Proper shipping name: Amines, liquid, corrosive, flammable, n.o.s.
Hazard class: 8
Packing group: II
UN/NA-number: UN 2734
Primary hazard class: 8
Subsidiary hazard class: 3
Technical Name: OLEYLAMINOXETHYLATE

IATA
Proper shipping name: Amines, liquid, corrosive, flammable, n.o.s.
Class: 8
Packing group: II
UN/ID number: UN 2734
Primary risk: 8
Subsidiary risk: 3
Remarks: Shipment permitted
Hazard inducer(s): OLEYLAMINOXETHYLATE

IMDG
Proper shipping name: Amines, liquid, corrosive, flammable, n.o.s.
Class: 8
Packing group: II
UN no.: UN 2734
Primary risk: 8
Subsidiary risk: 3
Hazard inducer(s): OLEYLAMINOXETHYLATE

SECTION 15. REGULATORY INFORMATION

TSCA list: TSCA - 5(a) Significant New Use Rule List of Chemicals: Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Acute Health Hazard
Chronic Health Hazard
Fire Hazard
**Clean Water Act**  
Contains no known priority pollutants at concentrations greater than 0.1%.

**The components of this product are reported in the following inventories:**

- **REACH**: Not in compliance with the inventory  
  - Propan-2-ol  
  - Propylene Glycol  
  - 2,2’-(Octadec-9-enylimino)bisethanol  
  - C18-Alkyltrimethyl ammonium chloride

- **CH INV**: On the inventory, or in compliance with the inventory

- **TSCA**: On TSCA Inventory

- **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**: Not in compliance with the inventory  
  - C18-Alkyltrimethyl ammonium chloride

- **ISHL**: Not in compliance with the inventory  
  - C18-Alkyltrimethyl ammonium chloride

- **KECI**: Not in compliance with the inventory  
  - 2,2’-(Octadec-9-enylimino)bisethanol

- **PICCS**: On the inventory, or in compliance with the inventory

- **IECSC**: On the inventory, or in compliance with the inventory

- **TSCA**: On TSCA Inventory

**Inventories**
SECTION 16. OTHER INFORMATION

Further information

Observe national and local legal requirements
Observe all necessary precautions for handling flammable substances. Keep away from sources of heat and ignition. Smoking should be prohibited where material is being handled. Electrical grounding of equipment is required.

Revision Date : 05/12/2015

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable to the material. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate for that use. No warranty, express or implied, is made regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product specifications.

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