

SURFTREAT 9337

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Version : 2 - 4 / USA

Revision Date: 03/26/2020
Date of printing :04/15/2021

SECTION 1. IDENTIFICATION

| | |
|--|--|
| Identification of the company: | Clariant Corporation 4000 Monroe Road Charlotte, NC, 28205 Telephone No.: +1 704-331-7000 |
| Information of the substance/preparation: | BU Oil & Mining Services Product Stewardship +1-704-331-7710 |
| Emergency tel. number: | +1 800-424-9300(CHEMTREC) |

Trade name: SURFTREAT 9337
Material number: 233035
Chemical family: Mixture
Primary product use: Additive

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Skin corrosion : Category 1A
Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
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/

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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/ doctor.

P363 Wash contaminated clothing before reuse.

Storage:

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

Substance / Mixture : Mixture

Chemical nature : Mixture

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|--------------------------------------|-------------|-----------------------|
| 4-Nonylphenol, branched, ethoxylated | 127087-87-0 | <= 15 |
| Phosphoric acid | 7664-38-2 | >= 10 |
| Citric acid | 77-92-9 | <= 10 |

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

SECTION 4. FIRST AID MEASURES

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 : In case of contact, immediately wash with soap and water for at least 15 minutes. Remove contaminated clothing and shoes while washing. Isolate contaminated clothing for cleaning or disposal. Do not reuse unless thoroughly cleaned. Dispose of contaminated leatherwear. Get immediate medical attention.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
- 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 : Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Cool containers/tanks with water spray.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
Oxides of phosphorus

Emits toxic and corrosive fumes under fire conditions.
- Further information : Wear positive pressure self-contained breathing apparatus and full protective gear. Do not direct a solid stream of water or foam into hot burning pools; this may spread fire, cause frothing, and increase fire intensity. Containers can build up pressure if exposed to heat and/or fire. Vapors may form an explosive mixture with air. Vapors may travel to source of ignition and flash back. Use water spray to keep containers cool.
- Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent, and place in a suitable container.
Absorbent materials such as dry sand, absorbent booms, and

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vermiculite may be used to keep material from entering drains, sewers, or streams.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid breathing vapours.
Avoid contact with skin, eyes and clothing.
Use only with adequate ventilation and proper protective eyewear, gloves, and clothing.
Store in a well-ventilated place. Keep container tightly closed.
- Further information on storage conditions : Store in a cool, dry location away from heat, sparks and open flames.
Store in original container.
Keep container tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|-----------------|-----------|----------------------------------|---|-----------|
| Phosphoric acid | 7664-38-2 | TWA | 1 mg/m ³ | ACGIH |
| | | STEL | 3 mg/m ³ | ACGIH |
| | | TWA | 1 mg/m ³ | NIOSH REL |
| | | ST | 3 mg/m ³ | NIOSH REL |
| | | TWA | 1 mg/m ³ | OSHA Z-1 |
| | | TWA | 1 mg/m ³ | OSHA P0 |
| | | STEL | 3 mg/m ³ | OSHA P0 |

- Engineering measures** : Local ventilation recommended - mechanical ventilation may be used.

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 29CFR1910.134.
- Hand protection
Remarks : Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water.
- Eye protection : Tightly fitting safety goggles

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Face-shield

Skin and body protection : Wear suitable protective equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|--|---|--|
| Appearance | : | Liquid |
| Colour | : | Clear, colorless |
| Odour | : | pungent |
| Odour Threshold | : | not determined |
| pH | : | < 2.0 |
| Freezing point | : | < 32 °F / 0 °C |
| Initial boiling point | : | 219 °F / 104 °C |
| Flash point | : | > 200.1 °F / 93.4 °C |
| | | Method: closed cup |
| Evaporation rate | : | not determined |
| Flammability (solid, gas) | : | Not applicable |
| Upper explosion limit / upper flammability limit | : | not determined |
| Lower explosion limit / Lower flammability limit | : | not determined |
| Vapour pressure | : | not determined |
| Relative vapour density | : | not determined |
| Density | : | 1.06 - 1.11 g/cm ³ (77 °F / 25 °C) |
| Solubility(ies) | | |
| Water solubility | : | soluble |
| Partition coefficient: n-octanol/water | : | log Pow: 3.16 Information refers to the main component. |
| Auto-ignition temperature | : | Not applicable |

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Decomposition temperature : > 219 °F / > 104 °C
Stable up to boiling point.

Viscosity
Viscosity, dynamic : not determined

Viscosity, kinematic : not determined

SECTION 10. STABILITY AND REACTIVITY

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

Chemical stability : Stable

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

Conditions to avoid : Alkaline materials. attacks mild steel, galvanized iron,
aluminum and zinc
Keep away from oxidizing agents.

Incompatible materials : Metals
Light and/or alkaline metals
Oxidizing agents

Hazardous decomposition products : No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Eye contact
Skin contact
Ingestion
Inhalation

Acute toxicity**Product:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:**Phosphoric acid:**

Acute oral toxicity : LD50 (Rat): approx. 2,600 mg/kg
Method: OECD Test Guideline 423

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GLP: no

Acute inhalation toxicity : Remarks: Study not performed as the substance is corrosive.

Acute dermal toxicity : Remarks: Study not performed as the substance is corrosive.

Citric acid:Acute oral toxicity : LD50 (Mouse, male and female): 5,400 mg/kg
Method: OECD Test Guideline 401
GLP: no
Remarks: No significant adverse effects were reported

Acute inhalation toxicity : Remarks: not required

Acute dermal toxicity : LC50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes**Skin corrosion/irritation****Product:**

Result: Corrosive

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:**Phosphoric acid:**Species: Rabbit
Exposure time: 24 h
Method: Other
Result: Causes burns.
GLP: no data available**Citric acid:**Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes**Serious eye damage/eye irritation****Product:**

Result: Corrosive

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

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Components:**Phosphoric acid:**

Assessment: Risk of serious damage to eyes.

Remarks: Study not performed as the substance is corrosive.

Citric acid:

Species: rabbit eye

Assessment: Irritating to eyes.

Method: OECD Test Guideline 405

GLP: yes

Respiratory or skin sensitisation**Product:**

Result: non-sensitizing

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:**Phosphoric acid:**

Remarks: Study not performed as the substance is corrosive.

Assessment: Causes severe skin burns and eye damage.

Citric acid:

Exposure routes: Dermal

Result: Not a skin sensitizer.

Remarks: not required

Assessment: Causes serious eye irritation.

Germ cell mutagenicity**Components:****Phosphoric acid:**

Genotoxicity in vitro

: Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 50 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Ames test
Test system: Escherichia coli
Concentration: 50 - 5000 µg/plate
Metabolic activation: with and without metabolic activation

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Method: OECD Test Guideline 471

Result: negative

GLP: yes

Test Type: In vitro gene mutation study in mammalian cells

Test system: mouse lymphoma cells

Concentration: 0, 61.25, 122.5, 245, 490, 735

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: yes

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Concentration: 0, 30.63, 61.25, 122.5, 245, 4

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

GLP: yes

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

Citric acid:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Concentration: 50 - 3000 µg/ml
Metabolic activation: without
Method: OECD Test Guideline 487
Result: positive
GLP: No information available.

Test Type: Ames test

Test system: Salmonella typhimurium

Concentration: <= 5000 µg/plate

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

GLP: No information available.

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Rat (male)
Strain: Sprague-Dawley
Cell type: Bone marrow
Application Route: oral (gavage)
Exposure time: 1 - 5 d
Dose: 1-5x 1,2-120-300-3500 mg/kg
Method: OECD Test Guideline 475
Result: negative
GLP: no

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Test Type: dominant lethal test
 Species: Rat (male)
 Strain: Sprague-Dawley
 Cell type: Bone marrow
 Application Route: oral (gavage)
 Exposure time: 1 - 5 d
 Dose: 1-5x 1,2-120-300-3500 mg/kg
 Method: Other
 Result: negative
 GLP: no

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity**Components:****Phosphoric acid:**

Carcinogenicity - Assessment : No information available.

Citric acid:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

IARC Not listed

OSHA Not listed

NTP Not listed

Reproductive toxicity**Components:****Phosphoric acid:**

Effects on fertility : Test Type: One generation study
 Species: Rat, male and female
 Strain: Sprague-Dawley
 Application Route: oral (gavage)
 Dose: 0, 125, 250 and 500 mg/kg
 Duration of Single Treatment: 42 - 54 d
 Frequency of Treatment: 1 daily
 General Toxicity - Parent: NOAEL: \geq 500 mg/kg body weight
 General Toxicity F1: NOAEL: \geq 500 mg/kg body weight
 Fertility: NOAEL: \geq 500 mg/kg body weight
 Method: OECD Test Guideline 422
 GLP: yes

Effects on foetal development : Test Type: Pre-natal
 Species: Mouse, female

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Strain: CD1
Application Route: oral (gavage)
Dose: 3,7 - 17,2 - 79,7 - 370 mg/kg
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: \geq 370 mg/kg body weight
Teratogenicity: NOAEL: \geq 370 mg/kg body weight
Method: OECD Test Guideline 414
GLP: no
Remarks: By analogy with a product of similar composition

Test Type: Pre-natal
Species: Rat, female
Strain: wistar
Application Route: oral (gavage)
Dose: 4,1 - 19 - 88,3 - 410 mg/kg
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: \geq 410 mg/kg body weight
Teratogenicity: NOAEL: \geq 410 mg/kg body weight
Method: OECD Test Guideline 414
GLP: no
Remarks: By analogy with a product of similar composition

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Citric acid:

Effects on foetal development : Test Type: Fertility/early embryonic development
Species: Rat, female
Strain: wistar
Application Route: oral (gavage)
Dose: 0, 2.95, 13.7, 63.6, 295 mg/k
Duration of Single Treatment: 10 d
Frequency of Treatment: 1 daily
Teratogenicity: NOAEL: $>$ 295 mg/kg body weight
Method: Other
GLP: no

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure**Components:****Phosphoric acid:**

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

Citric acid:

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

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STOT - repeated exposure**Components:****Phosphoric acid:**

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

Citric acid:

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

Repeated dose toxicity**Components:****Phosphoric acid:**

Species: Rat, male and female
NOAEL: 250 mg/kg
Application Route: oral (gavage)
Exposure time: 42 d (m), 54 d (fem)
Number of exposures: daily
Dose: 0, 125, 250 and 500 mg/kg
Group: yes
Method: OECD Test Guideline 422
GLP: yes

Repeated dose toxicity - Assessment : Causes severe skin burns and eye damage.

Citric acid:

Species: Rat
NOAEL: 4000 mg/kg bw/day
LOAEL: 8,000 mg/kg
Application Route: oral (gavage)
Exposure time: 10 d
Number of exposures: daily
Dose: 2, 4, 8, 16 g/kg bw/day
Group: yes
Method: Other
GLP: no

Repeated dose toxicity - Assessment : Causes serious eye irritation.

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Aspiration toxicity**Components:****Phosphoric acid:**

No aspiration toxicity classification

Citric acid:

No aspiration toxicity classification

Experience with human exposure**Product:**

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

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Fish): 10 - 100 mg/l
Exposure time: 96 h
Remarks: The values mentioned are those of the active ingredient.

Components:**Phosphoric acid:**

Toxicity to fish : Other (Lepomis macrochirus (Bluegill sunfish)): pH 3-3,3
End point: mortality
Exposure time: 96 h
Test Type: Other
Analytical monitoring: no
Method: Other
GLP: no data available

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

NOEC (Daphnia magna (Water flea)): 56 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202

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GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

NOEC (Desmodesmus subspicatus (green algae)): 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to microorganisms : Test Type: aquatic
Remarks: not required

Citric acid:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 440 - 760 mg/l
End point: mortality
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 203
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,535 mg/l
End point: mortality
Exposure time: 24 h
Test Type: static test
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae/aquatic plants : NOEC (Scenedesmus quadricauda (Green algae)): 425 mg/l
End point: Biomass

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Exposure time: 8 d
Test Type: static test
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to microorganisms : (Pseudomonas putida): > 10,000 mg/l
End point: Growth rate
Exposure time: 16 h
Test Type: aquatic
Analytical monitoring: no data available
Method: Other
GLP: No information available.
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to terrestrial organisms : NOEC (other avian): > 4,000 mg/kg
Exposure time: 14 d
End point: mortality
Method: Other

Persistence and degradability**Product:**

Biodegradability : Result: Inherently biodegradable.

Components:**Phosphoric acid:**

Biodegradability : Remarks: Not applicable for inorganic compound.

Physico-chemical removability : Remarks: Can be eliminated from water by precipitation.
Can be eliminated from water by flocculation.

Citric acid:

Biodegradability : aerobic
Inoculum: domestic sewage
Concentration: 10 mg/l
Carbon dioxide (CO₂)
Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 28 d

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Method: OECD Test Guideline 301B
GLP: No information available.

aerobic
Inoculum: domestic sewage
Concentration: 3 - 20 mg/l
DOC decrease
Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 19 d
Method: OECD Test Guideline 301E
GLP: No information available.

aerobic
Inoculum: domestic sewage
Concentration: 400 mg/l
DOC decrease
Result: Readily biodegradable.
Biodegradation: 85 %
Exposure time: 14 d
Method: OECD Test Guideline 302B
GLP: No information available.

Physico-chemical
removability : Remarks: Readily biodegradable, according to appropriate
OECD test.

Bioaccumulative potential**Components:****Phosphoric acid:**

Partition coefficient: n-
octanol/water : Remarks: inorganic

Citric acid:

Bioaccumulation : Bioconcentration factor (BCF): 3.2
Method: calculated
GLP: no

Partition coefficient: n-
octanol/water : log Pow: -1.55
Method: Other

Mobility in soil

no data available

Other adverse effects**Components:****Phosphoric acid:**

Environmental fate and
pathways : not available

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- Results of PBT and vPvB assessment : The substance is not identified as a PBT or as a vPvB substance.
Remarks: Not relevant for inorganic substances
- Additional ecological information : If it is not neutralised, observe pH value
Product must not be released into water without pre-treatment.
Do not allow to enter ground water, waterways or waste water undiluted or in large quantities.
May contribute to eutrophication in static waters, therefore should not be released into surface waters
Can be eliminated from water by flocculation.

Citric acid:

- Environmental fate and pathways : no data available
- Results of PBT and vPvB assessment : The substance is not identified as a PBT or as a vPvB substance.
- Additional ecological information : The product should not be allowed to enter drains, water courses or the soil.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

- RCRA - Resource Conservation and Recovery Act
Waste from residues : Yes -- If it becomes a waste as sold.
: Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14. TRANSPORT INFORMATION**DOT Regulation:**

- UN/NA-number: UN 1805
Proper shipping name: Phosphoric acid solution
- Primary hazard class: 8
Packing group: III
Reportable Quantity: 22,502.000 kg Phosphoric acid
- Emergency Response Guide: 154

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IATA

UN/ID number: UN 1805
 Proper shipping name: Phosphoric acid, solution

Primary risk: 8
 Packing group: III
 Remarks: Shipment permitted

IMDG

UN no.: UN 1805
 Proper shipping name: Phosphoric acid, solution

Primary risk: 8
 Packing group: III
 EmS: F-A S-B

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|-----------------|-----------|--------------------|-----------------------------|
| Phosphoric acid | 7664-38-2 | 5000 | * |

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|----------------|---------|--------------------|-----------------------------|
| Ethylene oxide | 75-21-8 | 10 | * |

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This product does not contain any toxic chemical listed under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986.

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

TSCA : All components are compliant with the TSCA Inventory Notification (Active) rule.

SECTION 16. OTHER INFORMATION**Further information****Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits

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| | | |
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| OSHA P0 | : | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| OSHA Z-1 | : | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| ACGIH / TWA | : | 8-hour, time-weighted average |
| ACGIH / STEL | : | Short-term exposure limit |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |
| NIOSH REL / ST | : | STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday |
| OSHA P0 / TWA | : | 8-hour time weighted average |
| OSHA P0 / STEL | : | Short-term exposure limit |
| OSHA Z-1 / TWA | : | 8-hour time weighted average |

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

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