Version: 3.1

Effective Date: Dec-16-2017 Previous Date: Sep-27-2016



SAFETY DATA SHEET KLARAID* PC1192

1. Identification

Product identifier KLARAID PC1192

Other means of identification None.

Recommended use Coagulant

Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc. 4636 Somerton Road Trevose, PA 19053

T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes serious eye irritation.

Precautionary statement

Prevention Wear eye/face protection. Wash thoroughly after handling.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise

classified (HNOC)

None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

| Components | CAS# | Percent |
|--|------------|---------|
| N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer | 26062-79-3 | 10 - 20 |

^{*}Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water.

Eve contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important

symptoms/effects, acute and

delayed

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing media

Specific hazards arising from

During fire, gases hazardous to health may be formed.

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Do not use water jet as an extinguisher, as this will spread the fire.

the chemical
Special protective equipment

and precautions for firefighters

Fire fighting

equipment/instructions

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methodsUse standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage

Precautions for safe handling

Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits Biological limit values

This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit. No biological exposure limits noted for the ingredient(s).

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Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material

but also on other quality features and is different from one producer to the other. Glove selection

must take into account any solvents and other hazards present.

Other Wear suitable protective clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure

limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Yellow
Physical state Liquid
Odor Mild

Odor threshold Not available.

pH (concentrated product) 6.3

pH in aqueous solution 6.2 (5% SOL.)

Melting point/freezing point 30 °F (-1 °C)

Initial boiling point and boiling Not available.

range

Flash point Evaporation rate Not applicable. < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

Not available.

Flammability limit - upper

(%)

Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure18 mm HgVapor pressure temp.70 °F (21 °C)Vapor density< 1 (Air = 1)

Relative density 1.03

Relative density temperature $70 \, ^{\circ}\text{F} \, (21 \, ^{\circ}\text{C})$

Solubility(ies)

Solubility (water) 100 %

Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperature Not available.

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Decomposition temperatureNot available.Viscosity168 cpsViscosity temperature70 °F (21 °C)

Other information

Pour point 35 °F (2 °C) Specific gravity 1.032

VOC 0 % (ASTM 3960-93)

10. Stability and reactivity

ReactivityThe product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stabilityMaterial is stable under normal conditions.Possibility of hazardousHazardous polymerization does not occur.

reactions

Conditions to avoidContact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition

products

Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

InhalationNo adverse effects due to inhalation are expected.Skin contactNo adverse effects due to skin contact are expected.

Eye contact Causes serious eye irritation.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

| Product | Species | Test Results |
|---|-----------------------------------|---|
| KLARAID PC1192 (CAS Mixture | e) | |
| Acute | | |
| Oral | | |
| LD50 | Rat | > 5000 mg/kg, (Calculated according to GHS additivity formula) |
| Components | Species | Test Results |
| N. N. Dissathard N. O. sassas and O. sa | anan 1 amaanium ahlarida hamanalu | (OAC 00000 70 0) |

N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer (CAS 26062-79-3)

Acute Oral

LD50 Rat 3000 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye

irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitizationThis product is not expected to cause respiratory sensitization. **Skin sensitization**This product is not expected to cause skin sensitization.

Germ cell mutagenicityNo data available to indicate product or any components present at greater than 0.1% are

mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

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^{*} Estimates for product may be based on additional component data not shown.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity -

single exposure

Not classified.

Specific target organ toxicity -

repeated exposure

Not classified.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

| Product | | Species | Test Results | |
|---|--------------------|-------------------|--|--|
| KLARAID PC1192 (CAS Mix | ture) | | | |
| | LC50 | Ceriodaphnia | 9.3 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid) | |
| | | Fathead Minnow | 3.8 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid) | |
| | | Mysid Shrimp | 628.5 mg/l, Static Renewal Bioassay, 48 hour | |
| | LOEL | Ceriodaphnia | 2 mg/l, Chronic Bioassay, 7 day | |
| | | Fathead Minnow | 2 mg/l, Chronic Bioassay, 7 day | |
| | NOEL | Ceriodaphnia | 6.25 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid) | |
| | | | 1 mg/l, Chronic Bioassay, 7 day | |
| | | Fathead Minnow | 2.5 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid) | |
| | | | 1 mg/l, Chronic Bioassay, 7 day | |
| | | Mysid Shrimp | 125 mg/l, Static Renewal Bioassay, 48 hour | |
| | | Sheepshead Minnow | 2000 mg/l, Static Renewal Bioassay, 96 hour | |
| Aquatic | | | | |
| Crustacea | LC50 | Daphnia magna | 32 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid) | |
| | NOEL | Daphnia magna | 15.6 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid) | |
| Fish | LC50 | Rainbow Trout | 14.1 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid) | |
| | NOEL | Rainbow Trout | 10 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid) | |
| oaccumulative potential | No data available. | | | |
| obility in soil | No data available. | | | |
| her adverse effects | Not available. | | | |
| ersistence and degradability | | | | |
| - COD (mgO2/g) | 270 | | | |
| - BOD 5 (mgO2/g) | 0 | | | |
| - BOD 28 (mgO2/g) | 7 | | | |
| Closed Bottle Test (% Degradation in 28 days) | 3 | | | |
| Zahn-Wellens Test (% Degradation in 28 days) | 6 | | | |
| - TOC (mg C/g) | 90 | | | |

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13. Disposal considerations

Disposal instructionsCollect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of

contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Empty containers or liners may retain some product residues. This material and its container must

be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes

Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Yes

chemical

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

Inventory status

Country(s) or regionInventory nameOn inventory (yes/no)*CanadaDomestic Substances List (DSL)YesCanadaNon-Domestic Substances List (NDSL)No

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On inventory (yes/no)* Country(s) or region Inventory name

United States & Puerto Rico

Toxic Substances Control Act (TSCA) Inventory

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods) Food and drug administration

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Oct-20-2014 Issue date **Revision date** Dec-16-2017

Version # 3.1

List of abbreviations CAS: Chemical Abstract Service Registration Number

ACGIH: American Conference of Governmental Industrial Hygienists

TWA: Time Weighted Average STEL: Short Term Exposure Limit

LD50: Lethal Dose, 50%

LC50: Lethal Concentration, 50% NOEL: No Observed Effect Level COD: Chemical Oxygen Demand **BOD: Biochemical Oxygen Demand** TOC: Total Organic Carbon

IATA: International Air Transport Association

IMDG: International Maritime Dangerous Goods Code

TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer The information provided in this 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

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materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300). Prepared by

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