



HiTEC® 6455 Fuel Additive

Safety Data Sheet

SDS no. H6455

Date of issue/Date of revision 3/27/2019

Section 1. Identification

GHS product identifier : HiTEC® 6455 Fuel Additive
Product use : Petrochemical industry: Corrosion inhibitor.

In case of emergency - Chemical

+1-703-527-3887 (International)
+1-703-741-5979 (Spanish language)
+1-800-424-9300 (US & Canada)

Manufacturer / Supplier

Afton Chemical Corporation
500 Spring St.
Richmond, VA 23219
USA

Afton Chemical Canada Corporation
5045 South Service Road
Suite 101
Burlington, ON L7L 5Y7
905-631-5470

Non-Emergency Telephone: +1-804-788-5800

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Combustible liquid.
Causes serious eye damage.
Causes skin irritation.
Suspected of causing cancer.
May cause drowsiness or dizziness.

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from flames and hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

Section 2. Hazards identification

- Response** : IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. 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 physician. In case of fire, use water spray (fog), foam, dry chemical or CO₂.
- Storage** : Store locked up. Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Additional hazards** : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | CAS number | Conc. (% w/w) | US GHS Classification |
|--|------------|---------------|---|
| (tetrapropenyl)succinic acid | 27859-58-1 | ≥45 - ≤55 | SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 |
| Solvent naphtha (petroleum), heavy arom. | 64742-94-5 | ≥45 - ≤55 | FLAMMABLE LIQUIDS - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| naphthalene | 91-20-3 | ≥5 - ≤8.7 | ASPIRATION HAZARD - Category 1 FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation. If specific chemical identify is withheld, it is to protect confidentiality.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. If inhaled, remove to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 15 minutes.

Section 4. First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam, dry chemical or CO₂.
- Unsuitable extinguishing media** : Do not use water jet.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and

Section 7. Handling and storage

material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------|--|
| naphthalene | ACGIH TLV (United States, 3/2017). Absorbed through skin. TWA: 10 ppm 8 hours. TWA: 52 mg/m ³ 8 hours. OSHA PEL (United States, 6/2016). TWA: 10 ppm 8 hours. TWA: 50 mg/m ³ 8 hours. |

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal protection

| | |
|-------------------------------|--|
| Hand protection | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. |
| Body protection | : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Other skin protection | : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection | : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |

Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state | : Liquid. |
| Color | : Yellow. [Light] |
| Odor | : Aromatic. |
| Odor threshold | : Not available. |
| pH | : Not available. |
| Melting point | : Not available. |
| Boiling point | : Not available. |
| Flash point | : Closed cup: 62°C (143.6°F) [Pensky-Martens. Minimum] Open cup: 75°C (167°F) [Cleveland.] |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Lower and upper explosive (flammable) limits | : Not available. |
| Vapor pressure | : Not available. |
| Vapor density | : Not available. |
| Density | : 0.95 g/cm³ |
| Relative density | : 0.9463 |
| Solubility | : Insoluble in the following materials: cold water. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Kinematic (40°C): 0.51 cm²/s |
| Viscosity | : Not available. |

Section 10. Stability and reactivity

| | |
|---|--|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |

Section 10. Stability and reactivity

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Test | Result | Species | Dose | Exposure | Remarks |
|--|---|-----------------------|---------|-------------------------|----------|--|
| (tetrapropenyl)succinic acid | 401 Acute Oral Toxicity | LD50 Oral | Rat | 2100 mg/kg | - | - |
| Solvent naphtha (petroleum), heavy arom. | 403 Acute Inhalation Toxicity | LC50 Inhalation Vapor | Rat | >5.28 mg/m ³ | 4 hours | Based on data for a similar substance. |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | >2000 mg/kg | - | Based on data for a similar substance. |
| | 420 Acute Oral Toxicity - Fixed Dose Method | LD50 Oral | Rat | >5000 mg/kg | - | Based on data for a similar substance. |
| naphthalene | - | LC50 Inhalation Gas. | Rat | >100 ppm | 8 hours | No effects at saturation. |
| | 403 Acute Inhalation Toxicity | LC50 Inhalation Vapor | Rat | >0.4 mg/l | 4 hours | No effects at saturation. |
| | - | LD50 Dermal | Rat | >2500 mg/kg | - | - |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rat | >16000 mg/kg | - | - |
| | 401 Acute Oral Toxicity | LD50 Oral | Mouse | 533 mg/kg | - | - |
| | - | LD50 Oral | Rat | 2600 mg/kg | - | - |

Conclusion/Summary : Not available.

Irritation/Corrosion

| Product/ingredient name | Test | Species | Result | Remarks |
|--|---------------------------------------|---------|----------------------|--|
| (tetrapropenyl)succinic acid | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Irritant | - |
| | - | Rabbit | Eyes - Irritant | - |
| Solvent naphtha (petroleum), heavy arom. | None available. | Rat | Eyes - Mild irritant | Based on data for a similar substance. |
| naphthalene | None available. | Rabbit | Skin - Mild irritant | - |
| | None available. | Rabbit | Eyes - Mild irritant | - |

Conclusion/Summary

Skin : Causes skin irritation.

Eyes : Causes serious eye damage.

Respiratory : Not available.

Sensitization

Section 11. Toxicological information

| Product/ingredient name | Test | Route of exposure | Species | Result | Remarks |
|--|------------------------|-------------------|------------|-----------------|--|
| (tetrapropenyl)succinic acid | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | - |
| Solvent naphtha (petroleum), heavy arom. | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | Based on data for a similar substance. |
| naphthalene | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | - |

Conclusion/Summary

Skin : Not available.

Respiratory : Not available.

Mutagenicity

| Product/ingredient name | Test | Experiment | Result | Remarks |
|--|--|--|----------------------|--|
| (tetrapropenyl)succinic acid | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| Solvent naphtha (petroleum), heavy arom. | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | Based on data for a similar substance. |
| | 479 Genetic Toxicology: <i>In vitro</i> Sister Chromatid Exchange Assay in Mammalian Cells | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| naphthalene | 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Animal | Positive | WOE does not support classification |
| | - | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 479 Genetic Toxicology: <i>In vitro</i> Sister Chromatid Exchange Assay in Mammalian Cells | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| | None available. | | | |
| | 486 Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells <i>in vivo</i> | Experiment: In vitro Subject: Mammalian-Human Experiment: In vivo Subject: Mammalian-Animal | Negative Negative | - - |

Conclusion/Summary : Not available.

Carcinogenicity

Result

| Product/ingredient name | Test | Species | Exposure | Result | Remarks |
|-------------------------|-----------------|---------|-------------------------------|--|---------|
| naphthalene | None available. | Rat | 105 weeks; 5 days per week | Positive - Route of exposure unreported | - |

Conclusion/Summary : Suspected of causing cancer.

Classification

| Product/ingredient name | OSHA | IARC | NTP |
|-------------------------|------|------|--|
| naphthalene | - | 2B | Reasonably anticipated to be a human carcinogen. |

Reproductive toxicity

Section 11. Toxicological information

| Product/ingredient name | Test | Route of exposure | Species | Maternal toxicity | Fertility | Development toxin | Remarks |
|--|---|-------------------|---------|-------------------|-----------|-------------------|--|
| (tetrapropenyl)succinic acid | 421 Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Negative | Negative | Negative | - |
| Solvent naphtha (petroleum), heavy arom. | 415 One-Generation Reproduction Toxicity Study | Oral | Rat | Positive | Negative | Negative | Based on data for a similar substance. |
| naphthalene | 413 Subchronic Inhalation Toxicity: 90-day Study | Inhalation | Rat | Positive | Negative | Negative | - |
| | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Oral | Rat | Positive | Negative | Negative | - |
| | 411 Subchronic Dermal Toxicity: 90-day Study | Dermal | Rat | Positive | Negative | Negative | - |

Conclusion/Summary : Not available.

Teratogenicity

| Product/ingredient name | Test | Species | Result | Remarks |
|-------------------------|---|---------|-----------------|---------|
| naphthalene | 414 Prenatal Developmental Toxicity Study | Rat | Negative - Oral | - |

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|--|------------|-------------------|------------------|
| Solvent naphtha (petroleum), heavy arom. | Category 3 | Not applicable. | Narcotic effects |

Aspiration hazard

| Name | Result |
|--|--------------------------------|
| Solvent naphtha (petroleum), heavy arom. | ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure : Skin, Eyes, Ingestion, and Inhalation

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 pain
 watering
 redness

Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

| Product/ingredient name | Test | Species | Dose | Exposure | Result | Remarks |
|--|---|---------|------------------------|----------|------------------------------------|--|
| (tetrapropenyl)succinic acid | 407 Repeated Dose 28-day Oral Toxicity Study in Rodents | Rat | 100 mg/kg | - | Sub-acute NOAEL Oral | - |
| Solvent naphtha (petroleum), heavy arom. | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Rat | 750 mg/kg | - | Sub-chronic NOAEL Oral | Based on data for a similar substance. |
| | 411 Subchronic Dermal Toxicity: 90-day Study | Rat | 495 mg/kg | - | Sub-chronic NOAEL Dermal | Based on data for a similar substance. |
| | 413 Subchronic Inhalation Toxicity: 90-day Study | Rat | 1000 mg/m ³ | 90 days | Sub-chronic NOAEL Inhalation Vapor | Based on data for a similar substance. |
| naphthalene | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Rat | 200 mg/kg | - | Sub-chronic NOAEL Oral | - |
| | 411 Subchronic Dermal Toxicity: 90-day Study | Rat | 1000 mg/kg | - | Sub-chronic NOAEL Dermal | - |
| | None available. | Rat | 1 ppm | 90 days | Sub-chronic NOAEL Inhalation Vapor | - |
| | 413 Subchronic Inhalation Toxicity: 90-day Study | Rat | 0.011 mg/l | 13 weeks | Sub-chronic LOAEL Inhalation Vapor | - |

- Conclusion/Summary** : Not available.
- General** : No known significant effects or critical hazards.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.

Section 11. Toxicological information

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure | Remarks |
|--|------------------------|---|----------|--|
| (tetrapropenyl)succinic acid | Acute EL50 100 mg/l | Algae - Pseudokirchneriella subcapitata | 96 hours | - |
| | Acute EL50 >100 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute EL50 >10000 mg/l | Micro-organism | 3 hours | - |
| | Acute LL50 >100 mg/l | Fish - Oncorhynchus mykiss | 96 hours | - |
| | Chronic NOEL 33 mg/l | Algae - Pseudokirchneriella subcapitata | 96 hours | - |
| Solvent naphtha (petroleum), heavy arom. | Acute EL50 >1 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Acute EL50 1.4 mg/l | Daphnia - Daphnia magna | 48 hours | Based on data for a similar substance. |
| | Acute LL50 2 to 5 mg/l | Fish - Oncorhynchus mykiss | 96 hours | - |
| | Chronic NOEL 1 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Chronic NOEL 0.48 mg/l | Daphnia - Daphnia magna | 21 days | Based on data for a similar substance. |
| naphthalene | Acute EC50 2.96 mg/l | Algae - Pseudokirchneriella subcapitata | 96 hours | - |
| | Acute EC50 2.16 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute LC50 0.96 mg/l | Fish - Oncorhynchus gorbuscha | 96 hours | - |
| | Chronic NOEC 0.59 mg/l | Daphnia - Daphnia pulex | 125 days | - |
| | Chronic NOEC 0.12 mg/l | Fish - Oncorhynchus gorbuscha | 40 days | - |

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

Persistence and degradability

| Product/ingredient name | Test | Result | Remarks |
|--|---|----------------------------------|--|
| (tetrapropenyl)succinic acid | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 18.3 % - Not readily - 28 days | - |
| Solvent naphtha (petroleum), heavy arom. | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 58.6 % - Inherent - 28 days | Based on data for a similar substance. |
| naphthalene | OECD 302C Inherent | 0 to 2 % - Not readily - 28 days | - |

Section 12. Ecological information

| | | | |
|---|---|-------------------|-------------------------|
| | Biodegradability: Modified MITI Test (II) | | |
| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
| (tetrapropenyl)succinic acid | - | - | Not readily |
| Solvent naphtha (petroleum), heavy arom. | - | - | Inherent |
| naphthalene | - | - | Not readily |

Bioaccumulative potential

| | | | |
|---|--------------------------|-------------|------------------|
| Product/ingredient name | LogP_{ow} | BCF | Potential |
| Solvent naphtha (petroleum), heavy arom. | 2.8 to 6.5 | 99 to 5780 | high |
| naphthalene | 3.4 | 36.5 to 168 | low |

Section 13. Disposal considerations


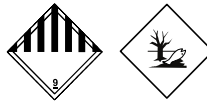
Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



United States - RCRA Toxic hazardous waste "U" List

| Ingredient | CAS # | Status | Reference number |
|-------------|---------|--------|------------------|
| Naphthalene | 91-20-3 | Listed | U165 |

Section 14. Transport information

| Regulatory information | UN number | Proper shipping name | Class | Packing group | Label | Additional information |
|---------------------------|-----------|---|---------------------|---------------|--|---------------------------------|
| DOT Classification | NA1993 | Combustible liquid, n.o.s. (Solvent naphtha) | Combustible liquid. | III | | - |
| TDG Classification | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (Solvent naphtha). Marine pollutant | 9 | III |  | - |
| IMDG Class | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (Solvent naphtha) Marine pollutant. | 9 | III |  | Remarks Marine pollutant |
| | | | | | | |

Section 14. Transport information

| | | | | | | |
|-----------------------|--------|---|---|-----|---|---|
| IATA-DGR Class | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (Solvent naphtha) | 9 | III |   | - |
|-----------------------|--------|---|---|-----|---|---|

Notice to reader

The above transport information is provided to assist in the proper classification of this product and may not be suitable for all shipping conditions.

Section 15. Regulatory information

U.S. Federal regulations :

[SARA 302/304](#)

[Composition/information on ingredients](#)

No products were found.

[SARA 311/312](#)

Classification : FLAMMABLE LIQUIDS - Category 4
 SKIN IRRITATION - Category 2
 SERIOUS EYE DAMAGE - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

[Composition/information on ingredients](#)

| Name | % | Classification |
|--|-----------|---|
| (tetrapropenyl)succinic acid | ≥45 - ≤55 | SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 |
| Solvent naphtha (petroleum), heavy arom. | ≥45 - ≤55 | FLAMMABLE LIQUIDS - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| naphthalene | ≥5 - ≤8.7 | ASPIRATION HAZARD - Category 1 FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2 |

[SARA 313](#)

| | Product name | CAS number | % |
|--|--------------|------------|-----------|
| Form R - Reporting requirements | naphthalene | 91-20-3 | ≥5 - ≤8.7 |
| Supplier notification | naphthalene | 91-20-3 | ≥5 - ≤8.7 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

RQ (Reportable quantity) : CERCLA: Hazardous substances.: naphthalene: 100 lbs. (45.4 kg);

[United States - TSCA 12\(b\) - Chemical export notification](#)

[List name](#)

[Status](#)

[Name on list](#)

[Ref. number](#)

None of the components are listed.

[State - California Prop. 65](#)

WARNING: This product contains a chemical known to the State of California to cause cancer.

Section 15. Regulatory information

| Ingredient name | % | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|-----------------|-----------|--------|--------------|---------------------------|---------------------------------|
| Naphthalene | ≥5 - ≤8.7 | Yes. | No. | Yes. | - |

Canadian regulations

Canadian NPRI : The following components are listed: Heavy aromatic solvent naphtha; Naphthalene

CEPA Toxic substances : The following components are listed: Naphthalene

International Inventory Status

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Japan : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Taiwan : All components are listed or exempted.

United States : All components are listed or exempted.

Europe : For information on compliance with regulation (EC) No. 1907/2006 (REACH) and amendments please contact your Afton representative.

Section 16. Other information

History

Date of issue/Date of revision : 3/27/2019

Prepared by : EHS Department (Tel: +1 804 788 5800)

Key to abbreviations

: ATE = Acute Toxicity Estimate
 : BCF = Bioconcentration Factor
 : GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 : IATA = International Air Transport Association
 : IBC = Intermediate Bulk Container
 : IMDG = International Maritime Dangerous Goods
 : LogPow = logarithm of the octanol/water partition coefficient
 : MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 : UN = United Nations
 : WOE = Weight of Evidence

Indicates information that has changed from previously issued version.

Notice to reader

This information and these recommendations are offered in good faith and believed to be correct as of the date hereof. Information and recommendations are supplied upon the condition that the recipients will make their own decision as to safety and suitability for their purposes. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature, are made with respect to the product or the information and recommendations. Afton makes no representation as to completeness or accuracy. In no event will Afton be responsible for damages of any nature whatsoever resulting from the use or reliance upon the information and recommendations.