



# Safety Data Sheet

**HiTEC® 521 Performance Additive**

SDS no. H521

Date of issue/Date of revision 11/22/2022

## Section 1. Identification

**GHS product identifier** : HiTEC® 521 Performance Additive  
**Product use** : Petrochemical industry: Hydraulic Additive Package

### In case of emergency - Chemical

0800-70-77-022 (Brazil)  
800-681-9531 (Mexico)  
+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** : EYE IRRITATION - Category 2A  
TOXIC TO REPRODUCTION (Fertility) - Category 1B

### GHS label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: Causes serious eye irritation.  
May damage fertility.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Wash thoroughly after handling.

#### Response

: IF exposed or concerned: Get medical advice or attention. 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 or attention.

#### Storage

: Store locked up. Store in a well-ventilated place.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

## Section 2. Hazards identification

**Additional hazards** : When heated above 90°C (194°F), thermal decomposition may occur producing CO, CO<sub>2</sub>, phosphorus oxides, metal oxide/ oxides, hydrogen sulfide.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	CAS number	Conc. (% w/w)	US GHS Classification
zinc bis[O,O-bis(2-ethylhexyl)] bis (dithiophosphate)	4259-15-8	≥45 - ≤55	SERIOUS EYE DAMAGE - Category 1
2,6-di-tert-butylphenol	128-39-2	≥15 - ≤25	SKIN IRRITATION - Category 2
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	≥10 - ≤15	Not classified.
calcium bis(dinonylnaphthalenesulphonate)	57855-77-3	≥1 - ≤1.5	SKIN IRRITATION - Category 2
phenol, (tetrapropenyl) deriva-tives	74499-35-7	≥0.1 - ≤0.3	EYE IRRITATION - Category 2A SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION (Fertility) - Category 1B

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** : 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. Get medical attention.
- Inhalation** : If inhaled, remove to fresh air. 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. Get medical attention. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 15 minutes.
- Ingestion** : 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. Get medical attention. 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 irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.

## Section 4. First aid measures

**Ingestion** : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

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

**Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

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

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**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 CO<sub>2</sub>.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. 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  
nitrogen oxides  
sulfur oxides  
phosphorus oxides  
metal oxide/oxides  
Hydrogen sulfide

**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. Take precautions to limit storage vessel surface temperature to below 121°C (250°F).

**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. Avoid breathing 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. 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. 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. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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 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. 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.

The following information is provided for health and safety purposes. Please refer to individual product specification documents for quality-related storage and handling. Preferred storage temperature is between ambient and 85°C. Exposure to elevated temperatures will increase the rate of hydrogen sulfide (H<sub>2</sub>S) and mercaptan generation.

## Section 7. Handling and storage

Temperatures above 90°C should be avoided unless an appropriate engineering review has been conducted on the process.

## 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
Distillates (petroleum), hydrotreated heavy paraffinic	<b>ACGIH TLV (United States, 1/2022).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours.

#### Appropriate engineering controls

- : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### 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: safety glasses with side-shields.

#### Skin protection

##### Hand protection

- : Hand Protection: Wear chemical resistant gloves. Nitrile gloves of minimum thickness 0.4 mm have an expected breakthrough time of 480 minutes or less when in frequent contact with the product. Due to variable exposure conditions the user must consider that the practical use of a chemical-protective glove in practice may be much shorter than the permeation time above. Manufacturer's directions for use, especially about the minimum thickness and the minimum breakthrough time, must be observed. This information does not replace suitability tests by the end user since glove protection varies depending on the conditions under which the product is used.

##### 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. [Oily.]
Color	: Brown. [Dark]
Odor	: Petroleum-like [Slight]
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: 100°C (212°F) [Minimum Pensky-Martens]
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	: 1.028 g/cm <sup>3</sup> [59°F (15°C)]
Relative density	: 1.031
Solubility(ies)	:

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): 75 mm <sup>2</sup> /s (75 cSt) Minimum 9.8 cSt @ 100°C
Explosive properties	: Not available.
Oxidizing properties	: Not available.

### Aerosol product

## 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.
Conditions to avoid	: High temperatures, sparks and open flames.
Incompatible materials	: Strong oxidizing and reducing agents.
Hazardous decomposition products	: Hydrogen sulfide



## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Test	Result	Species	Dose	Exposure	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	3100 mg/kg	-	-
2,6-di-tert-butylphenol	None available.	LD50 Dermal	Rabbit	>10000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	-
Distillates (petroleum), hydrotreated heavy paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours	Based on data for a similar substance. Based on data for a similar substance. Based on data for a similar substance.
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	
	None available.	LC50 Inhalation Vapor	Rat	>18 mg/l	1 hours	
calcium bis (dinonylnaphthalenesulphonate)	None available.	LD50 Dermal	Rat	>20000 mg/kg	-	-
phenol, (tetrapropenyl) derivatives	None available.	LD50 Oral	Rat	>5000 mg/kg	-	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	15000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	2200 mg/kg	-	-

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

Product/ingredient name	Test	Species	Result	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Visible necrosis	Not H319 at <50%. On basis of test data. Not H318 at <80%. On basis of test data.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	-
2,6-di-tert-butylphenol	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Irritant	Not H315 at <35%. On basis of test data
Distillates (petroleum), hydrotreated heavy paraffinic	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
calcium bis (dinonylnaphthalenesulphonate)	None available.	Rabbit	Eyes - Severe irritant	-
phenol, (tetrapropenyl) derivatives	None available.	Rabbit	Skin - Irritant	-
	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Visible necrosis	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Visible necrosis	-

#### Conclusion/Summary

**Skin** : Causes mild skin irritation. Based on test data for this or similar products.

**Eyes** : Causes serious eye irritation. Based on test data for this or similar products.

**Respiratory** : Not available.

#### Sensitization

## Section 11. Toxicological information

Product/ingredient name	Test	Route of exposure	Species	Result	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
2,6-di-tert-butylphenol	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
Distillates (petroleum), hydrotreated heavy paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-

### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	None available.	Experiment: In vitro Subject: Mammalian-Animal	Positive	WOE does not support classification
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative	-
2,6-di-tert-butylphenol	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
Distillates (petroleum), hydrotreated heavy paraffinic	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Based on data for a similar substance.
	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
	476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
	474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
calcium bis (dinonylnaphthalenesulphonate)	-	Experiment: In vitro Subject: Bacteria	Negative	-
	-	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
phenol, (tetrapropenyl) derivatives	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	-

**Conclusion/Summary** : Not available.

### Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	451 Carcinogenicity Studies	Mouse	78 weeks	Negative - Dermal - NOAEL	Based on data for a similar substance.

**Conclusion/Summary** : Not available.

### Classification

### Reproductive toxicity



## Section 11. Toxicological information

Product/ingredient name	Test	Route of exposure	Species	Maternal toxicity	Fertility	Development toxin	Remarks
zinc bis[O,O-bis (2-ethylhexyl)] bis (dithiophosphate)	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	-
2,6-di-tert-butylphenol	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Positive	Negative	Equivocal	WOE does not support classification
Distillates (petroleum), hydrotreated heavy paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
phenol, (tetrapropenyl) deriva-tives	416 Two-Generation Reproduction Toxicity Study	Oral	Rat	Positive	Positive	Positive	-

**Conclusion/Summary** : North America and South America GHS classification: May damage fertility.  
For other regional GHS classifications: Not classified.

### Teratogenicity

Product/ingredient name	Test	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

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

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

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

**Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

## Section 11. Toxicological information

**Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

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

#### Short term exposure

**Potential immediate effects** : Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.  
 Ingestion may cause gastrointestinal irritation and diarrhea.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Product/ingredient name	Test	Species	Dose	Exposure	Result	Remarks
zinc bis[O,O-bis(2-ethylhexyl)]bis(dithiophosphate)	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	125 mg/kg	-	Sub-acute NOAEL Oral	-
2,6-di-tert-butylphenol	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	270 mg/kg	-	Sub-chronic NOAEL Oral	-
	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	100 mg/kg	-	Sub-acute NOAEL Oral	-
Distillates (petroleum), hydrotreated heavy paraffinic	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	125 mg/kg	-	Sub-chronic LOAEL Oral	Based on data for a similar substance.
	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rabbit	1000 mg/kg	-	Sub-acute NOAEL Dermal	Based on data for a similar substance.
	411 Subchronic Dermal Toxicity: 90-day Study	Rat	30 mg/kg	-	Sub-chronic NOAEL Dermal	Based on data for a similar substance.
	None available.	Rat	0.15 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
	None available.	Rat	0.22 mg/l	4 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
calcium bis (dinonylnaphthalenesulphonate)	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat	95 mg/kg	-	Sub-acute NOAEL Oral	-
phenol, (tetrapropenyl) derivatives	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	60 mg/kg	-	Sub-acute NOAEL Oral	-
	416 Two-Generation Reproduction Toxicity Study	Rat	15 mg/kg	-	Sub-chronic NOAEL Oral	-
	408 Repeated Dose	Rat	100 mg/kg	-	Sub-chronic	-

## Section 11. Toxicological information

	90-Day Oral Toxicity Study in Rodents				NOAEL Oral	
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<b>Conclusion/Summary</b>	: Not available.
<b>General</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: May damage fertility.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	Acute EL50 410 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Acute EL50 75 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 380 mg/l	Micro-organism	16 hours	-
	Acute LL50 4.4 mg/l	Fish - Oncorhynchus mykiss	96 hours	-
	Chronic NOEL 220 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Chronic NOEL 0.4 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
2,6-di-tert-butylphenol	Acute EC50 1.2 mg/l	Algae - Pseudokirchneriella subcapitata	96 hours	-
	Acute EC50 0.45 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EC50 >1000 mg/l	Micro-organism	3 hours	-
	Acute LC50 1.4 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic NOEC 0.64 mg/l	Algae - Pseudokirchneriella subcapitata	96 hours	-
	Chronic NOEC 0.035 mg/l	Daphnia - Daphnia magna	21 days	-
Distillates (petroleum), hydrotreated heavy paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL 1000 mg/l	Fish - Oncorhynchus mykiss	14 days	QSAR result.
	Acute EC50 >1.2 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	No effects at saturation. Based on data for a similar substance.
calcium bis (dinonylnaphthalenesulphonate)	Acute EC50 >0.27 mg/l	Daphnia - Daphnia magna	48 hours	No effects at saturation. Based on data for a similar substance.

## Section 12. Ecological information

phenol, (tetrapropenyl) derivatives	Acute EL50 560 mg/l	Micro-organism	3 hours	Based on data for a similar substance. No effects at saturation. Based on data for a similar substance. - - - - - - -
	Acute LC50 >0.28 mg/l	Fish - Cyprinus carpio	98 hours	
	Chronic NOEL 4.6 mg/l	Daphnia - Daphnia magna	21 days	
	Acute EL50 0.36 mg/l	Algae - Desmodesmus subspicatus	72 hours	
	Acute EL50 0.037 mg/l	Daphnia - Daphnia magna	48 hours	
	Acute EL50 >1000 mg/l	Micro-organism	3 hours	
	Acute LL50 40 mg/l	Fish - Pimephales promelas	96 hours	
	Chronic NOEL 0.07 mg/l	Algae - Desmodesmus subspicatus	72 hours	
	Chronic NOEL 0.0037 mg/l	Daphnia - Daphnia magna	21 days	

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

### Persistence and degradability

Product/ingredient name	Test	Result	Remarks
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	OECD 301D Ready Biodegradability - Closed Bottle Test	<5 % - Not readily - 27 days	-
2,6-di-tert-butylphenol	OECD ECHA 302C Inherent Biodegradability: Modified MITI Test (II)	12 to 24 % - Not readily - 28 days	-
Distillates (petroleum), hydrotreated heavy paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
calcium bis (dinonylnaphthalenesulphonate)	OECD 301B Ready Biodegradability - CO <sub>2</sub> Evolution Test	14 % - Not readily - 29 days	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	OECD 301B Ready Biodegradability - CO <sub>2</sub> Evolution Test	6 to 25 % - Not readily - 28 days	-

### Bioaccumulative potential

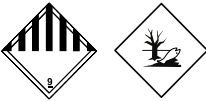
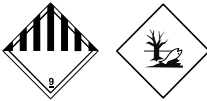
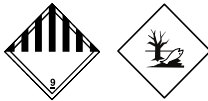

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	3.59	-	low
2,6-di-tert-butylphenol	4.5	-	high
phenol, (tetrapropenyl) derivatives	-	289 to 1601	high

## Section 12. Ecological information

## 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
<b>UN number</b>	UN3082	UN3082	UN3082	UN3082
<b>UN proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s. (2,6-di-tert-butylphenol). Marine pollutant	Environmentally hazardous substance, liquid, n.o.s. (2,6-di-tert-butylphenol). Marine pollutant	Environmentally hazardous substance, liquid, n.o.s. (2,6-di-tert-butylphenol) Marine pollutant	Environmentally hazardous substance, liquid, n.o.s. (2,6-di-tert-butylphenol)
<b>Transport hazard class(es)</b>	9 	9 	9 	9 
<b>Packing group</b>	III	III	III	III
<b>Environmental hazards</b>	Yes.	Yes.	Yes.	Yes.

**NAERG** : 171

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

**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

#### United States - TSCA Section 5

##### TSCA 5(a)2 final significant new use rules

None of the components are listed.

##### TSCA 5(a)2 proposed significant new use rules

None of the components are listed.

##### TSCA 5(e) substance consent order

## Section 15. Regulatory information

None of the components are listed.

### United States - TSCA Section 6

#### TSCA 6 final risk management

None of the components are listed.

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

#### Name on list

None of the components are listed.

#### Status

#### Ref. number

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
phenol	≤0.01	Yes.	500 / 10000	-	1000	-
ethylene oxide	≤0.00001	Yes.	1000	-	10	-
propylene oxide	≤0.00001	Yes.	10000	1444.3	100	14.4

**SARA 304 RQ** : 26284248.4 lbs / 11933048.8 kg [3066515.5 gal / 11608024.1 L]

**CERCLA** : CERCLA: Hazardous substances.: phenol: 1000 lbs. (454 kg); zinc bis[O,O-bis(2-ethylhexyl)] bis (dithiophosphate): No RQ is being assigned to the generic or broad class.; acetic acid: 5000 lbs. (2270 kg); ethylene oxide: 10 lbs. (4.54 kg); propylene oxide: 100 lbs. (45.4 kg); 1,4-dioxane: 100 lbs. (45.4 kg); ethanediol: 5000 lbs. (2270 kg);

### SARA 311/312

**Classification** : EYE IRRITATION - Category 2A  
TOXIC TO REPRODUCTION (Fertility) - Category 1B  
HNOC - Decomposes on heating.

#### Composition/information on ingredients

Name	%	Classification
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	≥45 - ≤55	SERIOUS EYE DAMAGE - Category 1 HNOC - Decomposes on heating.
2,6-di-tert-butylphenol	≥15 - ≤25	SKIN IRRITATION - Category 2
Distillates (petroleum), hydrotreated heavy paraffinic	≥10 - ≤15	HNOC - Static-accumulating flammable liquid
calcium bis (dinonylnaphthalenesulphonate)	≥1 - ≤1.5	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
phenol, (tetrapropenyl) derivatives	≥0.1 - ≤0.3	SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION (Fertility) - Category 1B

### SARA 313

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	4259-15-8	≥45 - ≤55

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.

### State - California Prop. 65

**⚠ WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.  
**⚠ WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.



## Section 15. Regulatory information

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Ethylene Glycol	≤0.1	No.	Yes.	-	Yes.
Ethylene oxide	≤0.00001	Yes.	Yes.	Yes.	Yes.
Propylene oxide	≤0.00001	Yes.	No.	-	-
1,4-Dioxane	≤0.00001	Yes.	No.	Yes.	-

www.P65Warnings.ca.gov.

### Canadian regulations

- Canada Significant New Activity Notice** : None of the components are listed.
- Canadian NPRI** : The following components are listed: zinc (and its compounds)
- CEPA Toxic substances** : None of the components are listed.

### International Inventory Status

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).
- 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.
- Switzerland** : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).
- Turkey** : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).
- Taiwan** : All components are listed or exempted.
- United Kingdom (UK)** : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).
- United States Active** : All components are active or exempted.

## Section 16. Other information

### History

- Date of issue/Date of revision** : 11/22/2022
- 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

- Toxicological and Ecotoxicological Test Data Summary(s)** : CMR\_A1, CORR\_A14, CORR\_A20

Indicates information that has changed from previously issued version.

### Notice to reader

## Section 16. Other information

*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.*