



# Safety Data Sheet

**HiTEC® 4313 Performance Additive**

**SDS no.** H4313

**Date of issue/Date of revision** 9/23/2019

## Section 1. Identification

**GHS product identifier** : HiTEC® 4313 Performance Additive  
**Product use** : Petrochemical industry: Corrosion inhibitor.

### **In case of emergency - Chemical**

0800-70-77-022 (Brazil)  
01-800-681-9531 (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** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** : Not classified.

### **GHS label elements**

**Signal word** : No signal word.

**Hazard statements** : No known significant effects or critical hazards.

### **Precautionary statements**

**Prevention** : Not applicable.

**Response** : Not applicable.

**Storage** : Store in well-ventilated place.

**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** : Substance

Ingredient name	CAS number	Conc. (% w/w)	US GHS Classification
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole 1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	89347-09-1 97503-12-3	>88 <11	Not classified. Not classified.

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. Get medical attention if irritation occurs.
- Inhalation** : If inhaled, remove to fresh air. Get medical attention if symptoms occur. 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. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- 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.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### 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.

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.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur 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.

- 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. 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).

### 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. 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. 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).
- 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.

## 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

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- 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** : 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.
- 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. [Clear. Viscous]
Color	: Yellow. Amber. [Light]
Odor	: Pungent. [Slight]
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: 130°C (266°F) [Pensky-Martens. Minimum]
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	: 1.12 g/cm³ [59°F (15°C)]
Relative density	: 1.12
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): 3.4 cm²/s
Viscosity	: 13.6 cSt at 100°C

## 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

## Section 11. Toxicological information

Product/ingredient name	Test	Result	Species	Dose	Exposure	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole  1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	403 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat	>2.75 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>2000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	>10000 mg/kg	-	-
	403 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat	>2.75 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on data for a similar substance. Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>10000 mg/kg	-	

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

Product/ingredient name	Test	Species	Result	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole  1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant	-
	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance. Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant	

### Conclusion/Summary

**Skin** : Causes mild skin irritation.

**Eyes** : Not available.

**Respiratory** : Not available.

### Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole 1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.

### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole  1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	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	-
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Based on data for a similar substance. Based on data for a similar substance.
	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	

## Section 11. Toxicological information

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

### Reproductive toxicity

Product/ingredient name	Test	Route of exposure	Species	Maternal toxicity	Fertility	Development toxin	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	-
1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

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

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**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** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

### 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
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	200 mg/kg	-	Sub-acute NOAEL Oral	Based on data for a similar substance.
1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	200 mg/kg	-	Sub-acute NOAEL Oral	-

**Conclusion/Summary** : Not available.

## Section 11. Toxicological information

<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>	: No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Not available.	

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole       1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	Acute EC50 ≥8000 mg/l	Micro-organism	16 hours	Based on data for a similar substance.
	Acute EL50 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EL50 41 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute LL50 >1000 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic EL10 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EC50 >8000 mg/l	Micro-organism - Pseudomonas putida	16 hours	Based on data for a similar substance.
	Acute EL50 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Acute EL50 41 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >1000 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic EL10 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.

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

### Persistence and degradability

Product/ingredient name	Test	Result	Remarks
2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole	OECD 301C Ready Biodegradability - Modified MITI Test (I)	2 % - Not readily - 28 days	Based on data for a similar substance.
1,3,4-Thiadiazole-2(3H)-thione, 5-(tert-nonyldithio)-	OECD 301C Ready Biodegradability -	0 % - Not readily - 28 days	Based on data for a similar substance.

## Section 12. Ecological information

	Modified MITI Test (I)		
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### Bioaccumulative potential

Not available.

## 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. 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

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
<b>DOT Classification</b>	Not regulated.	-	-	-		-
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>IMDG Class</b>	Not regulated.	-	-	-		-
<b>IATA-DGR Class</b>	Not regulated.	-	-	-		-

### 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** : Not applicable.

##### Composition/information on ingredients

No products were found.

## Section 15. Regulatory information

### SARA 313

No SARA 313 chemicals are present above the reporting threshold.

**RQ (Reportable quantity)** : CERCLA: Hazardous substances.: No products were found.

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

<u>List name</u>	<u>Status</u>	<u>Name on list</u>	<u>Ref. number</u>
None of the components are listed.			

### State - California Prop. 65

Not listed.

### Canadian regulations

**Canadian NPRI** : None of the components are listed.

**CEPA Toxic substances** : None of the components are listed.

### International Inventory Status

<b>Australia</b>	: All components are listed or exempted.
<b>Canada</b>	: All components are listed or exempted.
<b>China</b>	: All components are listed or exempted.
<b>Japan</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>United States</b>	: All components are listed or exempted.
<b>Europe</b>	: 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** : 9/23/2019

**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.*