

Rostabil TNF

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Issue date: 04/20/2023

Version: 1.0



SECTION 1: Identification

1.1. Identification

Product form : Substance
Trade name : Rostabil TNF
Chemical name : Tris (4-nonylphenyl, branched) phosphite
CAS-No. : 26523-78-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Functional Fluids

1.3. Details of the supplier of the safety data sheet

PCC Chemax, Inc.
30 Old Augusta Road
Piedmont, SC 29673 - USA
T 1-864-277-7000
cpatterson@pcc-chemax.com - www.pcc-chemax.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300 (CHEMTREC)
+1-703-527-3887 Outside the United States

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 1	H318
Skin sensitization, Category 1	H317
Reproductive toxicity Category 2	H361
Hazardous to the aquatic environment - Acute Hazard Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H361 - Suspected of damaging fertility or the unborn child
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) :

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a poison center or doctor.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.

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P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

2.4. Unknown acute toxicity (GHS US)

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name : Tris (nonylphenyl) Phosphite
CAS-No. : 26523-78-4

Name	Product identifier	%	GHS US classification
Phenol, nonyl-, phosphite (3:1)	(CAS-No.) 26523-78-4	> 95	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
4-nonylphenol, branched	(CAS-No.) 84852-15-3	< 4	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
First-aid measures after skin contact : Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Suspected of damaging fertility. Suspected of damaging the unborn child.
Symptoms/effects after inhalation : None under normal use.
Symptoms/effects after skin contact : Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : None under normal use.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : If there is a fire close by, use suitable extinguishing agents. Carbon dioxide. Dry powder. Foam. Sand. Water spray.
Unsuitable extinguishing media : Do not use a heavy water stream. Apply aqueous extinguishing media carefully to prevent frothing/steam explosion.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

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| Explosion hazard | : Closed containers may swell and rupture when exposed to extreme heat. Water spray may be used to cool containers. Avoid spraying of water directly into containers of burning material as frothing may result. |
| Reactivity | : The product hydrolyzes in the presence of water. Thermal decomposition may produce : Carbon oxides (CO, CO ₂). Phosphorus oxides. |

5.3. Advice for firefighters

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| Firefighting instructions | : Evacuate unnecessary personnel. Only qualified personnel equipped with suitable protective equipment may intervene. Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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| General measures | : Wear personal protective equipment. |
|------------------|---------------------------------------|

6.1.1. For non-emergency personnel

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| Protective equipment | : Only qualified personnel equipped with suitable protective equipment may intervene. |
| Emergency procedures | : Evacuate unnecessary personnel. Ventilate spillage area. |

6.1.2. For emergency responders

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| Protective equipment | : Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection". |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

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| For containment | : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. |
| Methods for cleaning up | : Stop leak if safe to do so. Contain or absorb spilled liquid with non-combustible material. Prevent runoff from entering drains, sewers or waterways. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of contaminated materials refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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| Additional hazards when processed | : Avoid contact with skin, eyes and clothing. |
| Precautions for safe handling | : Ensure good ventilation of the work station. Use personal protective equipment as required. Avoid all eye and skin contact and do not breathe vapor and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. |
| Hygiene measures | : Remove contaminated clothing and shoes. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. |

7.2. Conditions for safe storage, including any incompatibilities

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|----------------------------|---|
| Storage conditions | : Protect from moisture. Store in dry, cool, well-ventilated area. Store in original container. |
| Incompatible materials | : Oxidizing agents. Avoid contact of substance with water. |
| Storage temperature | : < 40 °C |
| Storage area | : Store, if possible, in a cool, well ventilated place away from incompatible materials. |
| Special rules on packaging | : Handle unclean empty containers as full ones. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters and occupational exposure limits

Phenol, nonyl-, phosphite (3:1) (26523-78-4)

Not applicable

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4-nonylphenol, branched (84852-15-3)

Not applicable

8.2. Exposure controls

Appropriate engineering controls	: Provide local exhaust or general room ventilation. Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves resistant to chemical penetration.
Eye protection	: Chemical goggles or safety glasses. Face shield.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear appropriate mask.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Colorless to light yellow liquid.
Color	: light yellow
Odor	: characteristic
Odor threshold	: No data available
pH	: 5.53 @ 5% in 50/50 isopropanol/water
Melting point	: 6 °C
Freezing point	: No data available
Boiling point	: 303 °C
Flash point	: > 215 °C Open cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability	: Not applicable.
Vapor pressure	: 0.000058 kPa [25°C]
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.97 g/cm ³ @ 25C
Solubility	: Insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: 14
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 350 – 700 mPa·s 50 °C
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

The product hydrolyzes in the presence of water. Thermal decomposition may produce : Carbon oxides (CO, CO₂). Phosphorus oxides.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Do not allow water (or moist air) contact with this material.

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10.5. Incompatible materials

Oxidizing agent. Water.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Skin and eye contact
Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

Phenol, nonyl-, phosphite (3:1) (26523-78-4)	
LD50 dermal rabbit	> 2000 mg/kg
4-nonylphenol, branched (84852-15-3)	
LD50 oral rat	1246 mg/kg
ATE US (oral)	500 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation. pH: 5.53 @ 5% in 50/50 isopropanol/water
Serious eye damage/irritation	: Causes serious eye damage. pH: 5.53 @ 5% in 50/50 isopropanol/water
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Symptoms/effects after inhalation	: None under normal use.
Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: None under normal use.

SECTION 12: Ecological information

12.1. Toxicity

Rostabil TNF	
Ecology - general	This material has not been tested for environmental effects.
Ecology - water	Testing not technically possible: Substance is highly insoluble in water. The product hydrolyses quickly in the presence of water to: isodecanol and phosphorous acid.
Phenol, nonyl-, phosphite (3:1) (26523-78-4)	
LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	0.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)
NOEC chronic algae	100 mg/l Exposure time: 72h - Species: Raphidocelis subcapitata
4-nonylphenol, branched (84852-15-3)	
LC50 - Fish [1]	0.096 mg/l Exposure time: 96h - Species: Pimephales promelas
EC50 - Crustacea [1]	0.044 mg/l Exposure time: 48h - Species: Moina macrocopa
LC50 - Fish [2]	0.017 mg/l Exposure time: 96h - Species: Pleuronectes americanus
EC50 - Crustacea [2]	0.085 mg/l Exposure time: 48h - Species: Daphnia magna
ErC50 algae	0.41 mg/l Exposure time: 96h - Species: Pseudokirchneriella subcapitata
NOEC chronic fish	0.0074 mg/l Exposure time: 33 days - Species: Pimephales promelas - Embryo
NOEC chronic crustacea	0.009 mg/l Exposure time: 28 days - Species: Potamopyrgus antipodorum

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12.2. Persistence and degradability

Rostabil TNF	
Persistence and degradability	Not established.
Phenol, nonyl-, phosphite (3:1) (26523-78-4)	
Persistence and degradability	<4 % biodegradation - 28 days. (OECD 301D method).

12.3. Bioaccumulative potential

Rostabil TNF	
Partition coefficient n-octanol/water (Log Pow)	14
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

- Effect on global warming : Not determined
- Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Regional legislation (waste) : Disposal must be done according to official regulations.
- Sewage disposal recommendations : This material and its container must be disposed of in a safe manner.
- Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
- Additional information : Clean up even minor leaks or spills if possible without unnecessary risk.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

- Transport document description (DOT) : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Tris (4-nonylphenyl, branched) phosphite), 9, III
- Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
- Packing group (DOT) : III - Minor Danger
- Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



- Marine pollutant : Yes



- Emergency Response Guide (ERG) Number : 171
- Other information : No supplementary information available.

Transport by sea

- UN-No. (IMDG) : 3082
- Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
- Packing group (IMDG) : III - substances presenting low danger
- Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tris (4-nonylphenyl, branched) phosphite), 9, III

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Air transport

UN-No. (IATA)	: 3082
Proper Shipping Name (IATA)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class (IATA)	: 9 - Miscellaneous Dangerous Substances and Articles
Packing group (IATA)	: III - Minor Danger
Transport document description (IATA)	: UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tris (4-nonylphenyl, branched) phosphite), 9, III

SECTION 15: Regulatory information

15.1. US Federal regulations

Rostabil TNF

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Health hazard - Skin corrosion or Irritation Health hazard - Respiratory or skin sensitization Health hazard - Serious eye damage or eye irritation Health hazard - Reproductive toxicity
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All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Phenol, nonyl-, phosphite (3:1)	CAS-No. 26523-78-4	> 95%
4-nonylphenol, branched	CAS-No. 84852-15-3	< 4%

Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S

4-nonylphenol, branched	CAS-No. 84852-15-3	< 4%
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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

4-nonylphenol, branched	CAS-No. 84852-15-3	< 4%
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15.2. International regulations

National regulations

Rostabil TNF

Listed on the Canadian DSL (Domestic Substances List) inventory
Listed on Australian Inventory of Industrial Chemicals (AIIC)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on TECI (Thailand Existing Chemicals Inventory)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the NCI (National Chemicals Inventory) of Vietnam

15.3. US State regulations

No additional information available

SECTION 16: Other information

Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H361	Suspected of damaging fertility or the unborn child
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

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This information is based on our current knowledge and it is intended to describe the product for the purposes of health, safety, and environmental requirements only. No warranty, as to the accuracy, completeness, or adequacy of the information contained herein is either expressed or implied. Users must determine individually, by testing or otherwise, the suitability of this product for their purposes, including mixing with other products. The revision of the document supersedes all those previously issued for the product.