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### SECTION 1: Identification of the substance/mixture and of the company

#### Product Identifier

Product Name: PowerNox™ 4150

Chemical Name: 4,4'-thiobis[2-tert.-butyl-5-methylphenol]

#### Relevant identified uses of the substance or mixture and uses advised against

Relevant applications identified For industrial use

#### Details of the supplier of the safety data sheet

##### Company

Tintoll Performance Materials Co.,Ltd.

A-703, No. 50 Jialingjiang East St, Nanjing, China

Email: SDS@TinToll.com

Emergency Telephone Number: +86-25-8468-0091

### SECTION 2: Hazardous identification

#### GHS Classification

Acute toxicity, Oral (Category 5), H303

Skin sensitization (Category 1), H317

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H303

May be harmful if swallowed.

H317

May cause an allergic skin reaction.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

P261

Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P272

Contaminated work clothing should not be allowed out of the workplace.

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P273	Avoid release to the environment.
P280	Wear protective gloves.
Response	
P302 + P352	IF ON SKIN: Wash with plenty of water.
P312	Call a POISON CENTER/ doctor if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
Disposal	
P501	Dispose of contents/ container to an approved waste disposal plant.

### Physical and chemical hazards

Referring to current information, no physical or chemical hazard.

### Health hazards

H303 May be harmful if swallowed.

H317 May cause an allergic skin reaction.

### Environmental hazards

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

### Other hazards

none

## SECTION 3: Composition/information on ingredients

<b>Substances/mixture:</b>	Substance
<b>Substances</b>	
Synonyms	5-tert-butyl-4-hydroxy-2-methylphenylsulfide 5-tert-Butyl-4-hydroxy-2-methylphenyl sulfide Bis(5-tert-butyl-4-hydroxy-2-methylphenyl)-thioether
Formula	C <sub>22</sub> H <sub>30</sub> O <sub>2</sub> S
Molecular weight	358.54 g/mol
CAS-No.	96-69-5
EC-No.	202-525-2
<b>Hazardous ingredients</b>	
Component	4,4'-thiobis[2-tert.-butyl-5-methylphenol]
Classification	Acute toxicity Category 5; Skin sensitization Category1; Short-term (acute) aquatic hazard Category1;

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Long-term (chronic) aquatic hazard Category1;  
H303, H317, H400, H410 M-Factor - Aquatic Acute:1

Concentration <= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### SECTION 4: First aid measures

##### Description of first aid measures

General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

##### Indication of any immediate medical attention and special treatment needed

No data available

##### Notes to physician

No data available

#### SECTION 5: Firefighting measures

##### Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Special hazards arising from the substance or mixture

Carbon oxides

Sulfur oxides

Combustible.

##### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

#### Advice on protection against fire and explosion

Provide appropriate exhaust ventilation at places where dust is formed.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

For precautions see section 2.

#### Conditions for safe storage, including any incompatibilities

##### Storage conditions

Keep container tightly closed in a dry and well-ventilated place.

Store under argon.

##### Storage class

Storage class (TRGS 510): 11: Combustible Solids

## SECTION 8: Exposure Controls/Personal Protection

### Control parameters

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### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
4,4'-thiobis[2-tert.-butyl-5-methylphenol]	96-69-5	TWA	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	10 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	15 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	10 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		PEL	10 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article107)
		PEL	5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article107)

### Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

##### Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level

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protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

## SECTION 9: Physical and Chemical Properties

### Information on basic physical and chemical properties

a) Appearance	Form: solid
b) Odor	No data available
c) Odor	Threshold No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 163 - 165 °C
f) Initial boiling point and boiling range	378 °C at 1,016 hPa - OECD Test Guideline 103
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	1.11 g/cm <sup>3</sup> at 20 °C
Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	log Pow: 5.24 at 25 °C
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
s) Explosive properties	Not classified as explosive.
t) Oxidizing properties	none

### Other safety information

No data available

## SECTION 10: Stability And Reactivity

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**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No data available

**Conditions to avoid**

No data available

**Incompatible materials**

Strong oxidizing agents

**Hazardous decomposition products**

In the event of fire: see section 5

**SECTION 11: Toxicological Information****Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - 2,345 mg/kg

Remarks: (RTECS)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - &gt; 5,010 mg/kg

Remarks: (ECHA)

**Skin corrosion/irritation**

Skin - Rabbit

Result: Moderate skin irritation

(OECD Test Guideline 404)

Remarks: (ECHA)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Moderate eye irritation

(OECD Test Guideline 405)

Remarks: (ECHA)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

May cause sensitization by skin contact.

Remarks: (ECHA)

**Germ cell mutagenicity**

Test Type: in vitro test

Test system: S. typhimurium

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Metabolic activation: with and without metabolic activation

Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)

Result: negative

Remarks: (ECHA)

Test Type: in vivo assay

Species: Rat

Application Route: Gavage

Result: negative

Remarks: (ECHA)

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: GP3150000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**SECTION 12: Ecological Effects****Toxicity**

Toxicity to fish

static test LC50 - Pimephales promelas (fathead minnow) - 0.36 mg/l - 96 h

Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 0.16 mg/l - 48 h

(OECD Test Guideline 202)

Remarks: (ECHA)

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available



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### Mobility in soil

No data available

### Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### Endocrine disrupting properties

No data available

### Other adverse effects

Very toxic to aquatic life with long lasting effects.

No data available

## SECTION 13: Disposal considerations

### Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport Information

### UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077

### UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(4,4'-thiobis[2-tert.-butyl-5-methylphenol])

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(4,4'-thiobis[2-tert.-butyl-5-methylphenol])

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(4,4'-thiobis[2-tert.-butyl-5-methylphenol])

### Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

### Packaging group

ADR/RID: III

IMDG: III

IATA: III

### Environmental hazards

ADR/RID: yes

IMDG Marine Pollutant: yes

IATA: yes

### Special precautions for user

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Not available

### Additional information

Strong oxidizing agents

### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

## SECTION 15:Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulatory information**

**Law on the Prevention and Control of Occupational Diseases**

**Other regulations**

Please pay attention on the waste treatment should also comply with local regulations requirement.

## SECTION 16:Other Information

**Full text of H-Statements referred to under sections 2 and 3.**

H303	May be harmful if swallowed.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### Further information

It must be recognized that the physical and chemical properties of any product may not be fully understood and that new, possibly hazardous products may arise from reactions between chemicals. The information given in this data sheet is based on our present knowledge and shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.