## Printing date 16.07.2021

CHEMICALS, INC.

Revision: 16.07.2021

1.1 Froundly	lentifier	
	1,2-Bis((2S,5S)-2,5-di-i-propylphospholano)ethane, min. 97%	
Item number CAS Number		
528854-34-4	•	
	identified uses of the substance or mixture and uses advised against	
No further real	evant information available.	
	the supplier of the safety data sheet	
Manufacture Strem Chemic		
7 Mulliken W		
	ORT, MA 01950	
USA		
info@strem.c		
	mation obtainable from: Technical Department	
	y <b>telephone number:</b> Y: CHEMTREC: + 1 (800) 424-9300	
	al opening times: +1 (978) 499-1600	
CROTION		
SECTION	2: Hazards identification	
2.1 Classifica	tion of the substance or mixture	
	according to Regulation (EC) No 1272/2008	
	ISO7	
	507	
	507	
$\checkmark$	1315 Causes skin irritation.	
Skin Irrit. 2		
Skin Irrit. 2 1 Eye Irrit. 2 1	1315 Causes skin irritation.	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 <b>2.2 Label eler</b>	1315 Causes skin irritation. 1319 Causes serious eye irritation. 1335 May cause respiratory irritation. nents	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label elen Labelling acc	1315 Causes skin irritation. 1319 Causes serious eye irritation. 1335 May cause respiratory irritation. nents ording to Regulation (EC) No 1272/2008	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label eler Labelling acc The substance	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label elen Labelling acc	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label eler Labelling acc The substance	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label eler Labelling acc The substance	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label elet Labelling acc The substance Hazard pictor	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 1 Eye Irrit. 2 1 STOT SE 3 1 2.2 Label eler Labelling acc The substance	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Pais classified and labelled according to the CLP regulation.</li> </ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictor GHS07	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Inents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>Peris classified and labelled according to the CLP regulation.</li> <li>Grams</li> </ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label elen Labelling acc The substance Hazard pictog GHS07 Signal word	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>nents</li> <li>ording to Regulation (EC) No 1272/2008</li> <li>e is classified and labelled according to the CLP regulation.</li> <li>grams</li> </ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictog GHS07 Signal word Hazard-deter 1,2-Bis((2S,5.	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Inents ording to Regulation (EC) No 1272/2008 e is classified and labelled according to the CLP regulation. grams Warning mining components of labelling: S)-2,5-di-i-propylphospholano)ethane, min. 97%</li></ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictor GHS07 Signal word Hazard-deter 1,2-Bis((2S,5, Hazard stater	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Inents ording to Regulation (EC) No 1272/2008 e is classified and labelled according to the CLP regulation. grams Warning mining components of labelling: S)-2,5-di-i-propylphospholano)ethane, min. 97% nents</li></ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictor GHS07 Signal word Hazard-deter 1,2-Bis((2S,5. Hazard stater H315 Causes	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Inents ording to Regulation (EC) No 1272/2008 e is classified and labelled according to the CLP regulation. grams Warning mining components of labelling: S)-2,5-di-i-propylphospholano)ethane, min. 97% nents skin irritation.</li></ul>	
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Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictor GHS07 Signal word Hazard-deter 1,2-Bis((2S,5) Hazard stater H315 Causes H319 Causes	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Hands</li> <li>H</li></ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label elen Labelling acc The substance Hazard pictog GHS07 Signal word Y Hazard-deter 1,2-Bis((2S,5. Hazard stater H315 Causes H319 Causes H335 May ca Precautionar P101	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Hand Source and Source an</li></ul>	
Skin Irrit. 2 I Eye Irrit. 2 I STOT SE 3 I 2.2 Label eler Labelling acc The substance Hazard pictor GHS07 Signal word I Hazard-deter 1,2-Bis((2S,5) Hazard stater H315 Causes H319 Causes H335 May ca Precautionar	<ul> <li>H315 Causes skin irritation.</li> <li>H319 Causes serious eye irritation.</li> <li>H335 May cause respiratory irritation.</li> <li>Hents ording to Regulation (EC) No 1272/2008 e is classified and labelled according to the CLP regulation. grams Warning mining components of labelling: S)-2,5-di-i-propylphospholano)ethane, min. 97% nents skin irritation. serious eye irritation. use respiratory irritation. y statements</li></ul>	

## HEMICALS, INC.

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 16.07.2021

Revision: 16.07.2021

Trade name: 1,2-Bis((2S,5S)-2,5-di-i-propylphospholano)ethane, min. 97%

	(Contd. of page 1)
P231	Handle under inert gas.
P222	Do not allow contact with air.
P305+P351+P338	B IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
	present and easy to do. Continue rinsing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P422	Store contents under inert gas.
P501	Dispose of contents/container in accordance with local/regional/national/international
	regulations.
· 2.3 Other hazards	

• Results of PBT and vPvB assessment

• *PBT*: Not applicable.

• **vPvB**: Not applicable.

#### **SECTION 3: Composition/information on ingredients**

· 3.1 Chemical characterisation: Substances

· CAS No. Description

528854-34-4 1,2-Bis((2S,5S)-2,5-di-i-propylphospholano)ethane, min. 97%

## **SECTION 4: First aid measures**

- · 4.1 Description of first aid measures
- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact:
- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- · 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

## **SECTION 5: Firefighting measures**

- · 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- · 5.3 Advice for firefighters
- · Protective equipment: No special measures required.

## **SECTION 6:** Accidental release measures

- · 6.1 Personal precautions, protective equipment and emergency procedures Not required.
- · 6.2 Environmental precautions: No special measures required.
- 6.3 Methods and material for containment and cleaning up: Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.
- 6.4 Reference to other sections
   See Section 7 for information on safe handling.
   See Section 8 for information on personal protection equipment.

(Contd. on page 3)

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Trade name: 1,2-Bis((2S,5S)-2,5-di-i-propylphospholano)ethane, min. 97%

(Contd. of page 2)

See Section 13 for disposal information.

### **SECTION 7: Handling and storage**

• 7.1 Precautions for safe handling Open and handle receptacle with care.

- · Handling: Handle under inert gas.
- · Information about fire and explosion protection: No special measures required.
- · 7.2 Conditions for safe storage, including any incompatibilities
- Storage: Store contents under inert gas.
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep container tightly sealed.
- · 7.3 Specific end use(s) No further relevant information available.

**SECTION 8: Exposure controls/personal protection** 

• Additional information about design of technical facilities: No further data; see item 7.

- · 8.1 Control parameters
- · Ingredients with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.
- Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

• Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  $\cdot$  *Material of gloves* 

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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ade name: 1,2-Bis((2S,5S)-2,5-di-i-propyl	phospholano)ethane, min. 97%	
• Eye protection:		(Contd. of page
Tightly sealed goggles		
• 9.1 Information on basic physical and c	hemical properties	
· General Information		
· Appearance:		
Form:	Solid	
Colour: • Odour:	White Undistinguishable	
· Odour: · Odour threshold:	Undistinguishable. Not determined.	
· pH-value:	Not applicable.	
· Change in condition		
Melting point/freezing point:	Undetermined.	
Initial boiling point and boiling range		
· Flash point:	Not applicable.	
· Flammability (solid, gas):	Not determined.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
• Auto-ignition temperature:	Not determined.	
• Explosive properties:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapour pressure:	Not applicable.	
· Density:	Not determined.	
· Relative density	Not determined.	
· Vapour density	Not applicable.	
· Evaporation rate	Not applicable.	
· Solubility in / Miscibility with		
water:	Insoluble.	
· Partition coefficient: n-octanol/water:	Not determined.	
· Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	
· Solvent content:		
Organic solvents:	0.0 %	
VOC (EC)	0.00 %	
Solids content:	100.0 %	
• 9.2 Other information	No further relevant information available.	

## SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.

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Trade name: 1,2-Bis((2S,5S)-2,5-di-i-propylphospholano)ethane, min. 97%

- · 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- · 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

## **SECTION 11: Toxicological information**

- · 11.1 Information on toxicological effects
- Acute toxicity Based on available data, the classification criteria are not met.
- · Primary irritant effect:
- · Skin corrosion/irritation
- Causes skin irritation.
- · Serious eye damage/irritation
- Causes serious eye irritation.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure
- May cause respiratory irritation.
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

## **SECTION 12: Ecological information**

- · 12.1 Toxicity
- · Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability No further relevant information available.
- · 12.3 Bioaccumulative potential No further relevant information available.
- · 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Not known to be hazardous to water.
- · 12.5 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

## **SECTION 13: Disposal considerations**

- · 13.1 Waste treatment methods
- · Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

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· 14.1 UN-Number · ADR, ADN, IMDG, IATA	not regulated	
	norregulated	
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	not regulated	
· 14.3 Transport hazard class(es)		
ADR, ADN, IMDG, IATA Class	not regulated	
Class	not regulated	
· 14.4 Packing group · ADR, IMDG, IATA	not regulated	
14.5 Environmental hazards:		
Marine pollutant:	No	
14.6 Special precautions for user	Not applicable.	
· 14.7 Transport in bulk according to Ann	ex II of	
Marpol and the IBC Code	Not applicable.	

#### **SECTION 15: Regulatory information**

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

- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I Substance is not listed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Technical Department.

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals

- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative Skin Irrit. 2: Skin corrosion/irritation – Category 2
- *Eye Irrit. 2: Skin corrosion/irritation Category 2 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*
- STOT SE 3: Specific target organ toxicity (single exposure) Category 3

<sup>·</sup> Contact: Technical Director

<sup>•</sup> Abbreviations and acronyms: