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

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

- · 1.1 Product identifier
- · Trade name: (S)-2,2',3,3'-Tetrahydro-6,6'-di(1-naphthalenyl)-1,1'-spirobi[1H-indene]-7,7'-diol, 98% (99% ee)
- · Item number: 08-0451
- · CAS Number:
- 1258327-02-4
- 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
- \cdot 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Strem Chemicals, Inc. 7 Mulliken Way NEWBURYPORT, MA 01950 USA info@strem.com
- · Further information obtainable from: Technical Department
- 1.4 Emergency telephone number: EMERGENCY: CHEMTREC: + 1 (800) 424-9300 During normal opening times: +1 (978) 499-1600

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture · Classification according to Regulation (EC) No 1272/2008 The substance is not classified according to the CLP regulation. · 2.2 Label elements · Labelling according to Regulation (EC) No 1272/2008 Void · Hazard pictograms Void · Signal word Void · Hazard statements Void · Precautionary statements P262 Do not get in eyes, on skin, or on clothing. P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 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. 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
- 1258327-02-4 (S)-2,2',3,3'-Tetrahydro-6,6'-di(1-naphthalenyl)-1,1'spirobi[1H-indene]-7,7'-diol, 98% (99% ee)

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(Contd. of page 1)

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- · General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water. Then 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.
- \cdot 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: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up: Dispose contaminated material as waste according to item 13.
- · 6.4 Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling No special measures required.
- · Information about fire and explosion protection: No special measures required.
- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- 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: None.
- 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.

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· 8.2 Exposure controls		
· Personal protective equipment:		
• General protective and hygienic measured	ures:	
	to be adhered to when handling chemicals.	
• Respiratory protection: Not required.	0	
· Protection of hands:		
(III)		
Protective gloves		
Troiteave gioves		
	ble and resistant to the product/ the substance/ the preparation.	
	on to the glove material can be given for the product/ the preparation/ the	
chemical mixture.	idention of the nonstruction times notes of diffusion and the descendation	
• Material of gloves	ideration of the penetration times, rates of diffusion and the degradation	
	es not only depend on the material, but also on further marks of quality a	
varies from manufacturer to manufactu		
· Penetration time of glove material		
	be found out by the manufacturer of the protective gloves and has to	
observed.	· · · · · · · · · · · · · · · · · · ·	
• Eye protection: Safety glasses		
· 9.1 Information on basic physical and	chemical properties	
· General Information		
· Appearance:		
Form:	Powder	
Colour:	Whitish	
• Odour:	Characteristic	
· Odour threshold:	Not determined.	
pH-value:	Not applicable.	
· Change in condition		
Melting point/freezing point:	Undetermined.	
Initial boiling point and boiling rang	-	
	Not applicable.	
-		
· Flammability (solid, gas):	Product is not flammable.	
 Flammability (solid, gas): Ignition temperature: 	Product is not flammable.	
· Flammability (solid, gas):		
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: 	Product is not flammable.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: 	Product is not flammable. Not determined.	
Auto-ignition temperature: Explosive properties: Explosion limits:	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: Upper: 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined. Not determined. Not determined.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: Upper: Vapour pressure: Density: 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined. Not determined. Not determined. Not applicable. Not determined.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: Upper: Vapour pressure: Density: Relative density 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined. Not determined. Not applicable. Not determined. Not determined.	
 Flammability (solid, gas): Ignition temperature: Decomposition temperature: Auto-ignition temperature: Explosive properties: Explosion limits: Lower: Upper: Vapour pressure: 	Product is not flammable. Not determined. Not determined. Product does not present an explosion hazard. Not determined. Not determined. Not determined. Not applicable. Not determined.	

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		(Contd. of page
· 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 %	
9.2 Other information	No further relevant information available.	

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 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.
- \cdot 10.4 Conditions to avoid No further relevant information available.
- \cdot 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 Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Based on available data, the classification criteria are not met.
- · 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.
- $\cdot \textit{Reproductive toxicity Based on available data, the classification criteria are not met.}$
- STOT-single exposure Based on available data, the classification criteria are not met.
- · 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:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

14.1 UN-Number	
ADR, ADN, IMDG, IATA	not regulated
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
14.4 Packing group	
ADR, IMDG, IATA	not regulated
14.5 Environmental hazards:	Not applicable.
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.
- · National regulations:
- Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- 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.

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· Contact: Technical Director

• Abbreviations and acronyms:

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