Printing date 07/16/2021

CHEMICALS

Reviewed on 07/16/2021

1 Identification

- · Product name
- · Trade name: Bis(ethylcyclopentadienyl)manganese, min. 98%
- Item number: 25-0210
- CAS Number: 101923-26-6
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Strem Chemicals, Inc.
 7 Mulliken Way NEWBURYPORT, MA 01950 USA info@strem.com
- Information department: Technical Department
 Emergency telephone number: EMERGENCY: CHEMTREC: +1 (800) 424-9300 During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

· Classification of the substance or mixture



Flam. Liq. 2 H225 Highly flammable liquid and vapor.

GHS08 Health hazard

H341 Suspected of causing genetic defects.

· Label elements

Muta. 2

· GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS). • *Hazard pictograms*



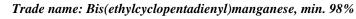
· Signal word Danger

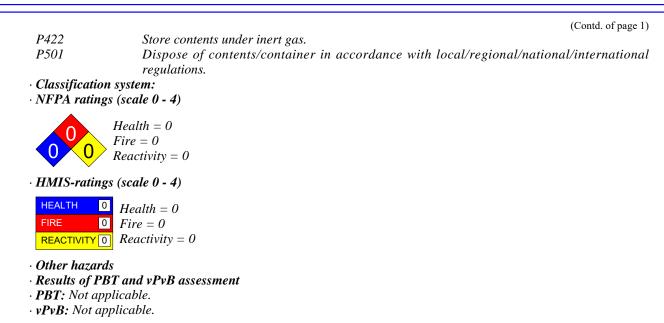
· Hazard-determini	ng components of labeling:
Bis(ethylcyclopent	adienyl)manganese, min. 98%
• Hazard statements	S
H225 Highly flam	mable liquid and vapor.
H341 Suspected of	f causing genetic defects.
· Precautionary sta	tements
P231	Handle under inert gas.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P305+P351+P33	8 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.

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3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 101923-26-6 Bis(ethylcyclopentadienyl)manganese, min. 98%

4 First-aid measures

- · Description of first aid measures
- · General information: Immediately remove any clothing soiled by the product.
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Immediately rinse with water.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:
- CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

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6 Accidental release measures

- *Personal precautions, protective equipment and emergency procedures* Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Prevent seepage into sewage system, workpits and cellars.

• Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

- 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.

· Protective Action Criteria for Chemicals

• PAC-1:

Substance is not listed.

· PAC-2:

Substance is not listed.

· PAC-3:

Substance is not listed.

7 Handling and storage

- · Handling: Handle under inert gas.
- · Precautions for safe handling Open and handle receptacle with care.
- Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- Storage: Store contents under inert gas.
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Store in cool, dry conditions in well sealed receptacles.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

- · Control parameters
- · Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.

- · Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

[·] Exposure controls

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Wash hands before breaks and at the end of work. Store protective clothing separately. • **Breathing equipment:** Not required.

• 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 • 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.

 \cdot Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· General Information	
· Appearance:	7 · · · 1
Form:	Liquid
Color:	Dark red
· Odor:	Odorless No. 4 No.
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	Not determined.

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		(Contd. of page
Upper:	Not determined.	
· Vapor pressure:	0.1 hPa	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octan	ol/water): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Organic solvents:	0.0 %	
VOC content:	0.0 g/l / 0.00 lb/gl	
• Other information	No further relevant information available.	

10 Stability and reactivity

· Reactivity No further relevant information available.

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

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- \cdot Additional toxicological information:

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

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12 Ecological information

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

13 Disposal considerations

· Waste treatment methods

· Recommendation:

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

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

UN-Number	
DOT, IMDG, IATA	UN1993
UN proper shipping name	
DOT	Flammable liquids, n.o.s.
IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
Transport hazard class(es)	
DOT	
FLAMABLE LOUD	
- Class	3 Flammable liquids
Label	3
IMDG, IATA	
- Class	3 Flammable liquids
Label	1

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· Packing group	
DOT, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
Special precautions for user	Warning: Flammable liquids
EMS Number:	F-E,S-E
Stowage Category	B
Transport in bulk according to Annex	II of
MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
DOT	
• Quantity limitations	On passenger aircraft/rail: 5L
~ .	On cargo aircraft only: 60L
· IMDG	
Limited quantities (LQ)	1L
· Excepted quantities ($\widetilde{E}Q$)	Code: E2
· · · · · · · ·	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN ''Model Regulation'':	UN 1993 FLAMMABLE LIQUIDS, N.O.S., 3, II

15 Regulatory information

- \cdot Safety, health and environmental regulations/legislation specific for the substance or mixture \cdot Sara
- Section 355 (extremely hazardous substances):
- Substance is not listed.
- \cdot Section 313 (Specific toxic chemical listings):
- Substance is not listed.
- · TSCA (Toxic Substances Control Act):
- Substance is not listed.
- · Proposition 65
- · Chemicals known to cause cancer:
- Substance is not listed.
- · Chemicals known to cause reproductive toxicity for females:
- Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males:
- Substance is not listed.
- · Chemicals known to cause developmental toxicity:
- Substance is not listed.
- · Carcinogenic categories
- · EPA (Environmental Protection Agency)
- Substance is not listed.

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Substance is not	listed.
NIOSH-Ca (Na	tional Institute for Occupational Safety and Health)
Substance is not	listed.
GHS label elem	ents
The substance is	s classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictogre	ums
GHS02 GHS	508
Signal word Da	nger
	i ning components of labeling: entadienyl)manganese, min. 98% nts
-	mmable liquid and vapor.
	l of causing genetic defects.
Precautionary s	
P231	Handle under inert gas.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
	338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if pres
	and easy to do. Continue rinsing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P233 P422	
	Store contents under inert gas.
P422	

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.
- · Contact: Technical Director
- · Date of preparation / last revision 07/16/2021 / -
- 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
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- *PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative*
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit

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Flam. Liq. 2: Flammable liquids – Category 2 Muta. 2: Germ cell mutagenicity – Category 2 (Contd. of page 8)

US

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