

TSE3221S-1K

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

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

1.1 Product identifier

Product name: TSE3221S-1K

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

Identified uses: Coating of electronic parts

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Importer/Distributor Information : Momentive Performance Materials GmbH
Chempark Leverkusen Gebaeude V7
DE - 51368 Leverkusen
Germany

Contact person : commercial.services@momentive.com

Telephone : General information
+390510924300 (Customer Service Centre)

1.4

Emergency telephone number : Europe, Israel & All other: +44 (0) 1235239670; Middle East:+44 (0) 1235239671

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has not been classified as hazardous according to the legislation in force.

Classification according to Regulation (EC) No 1272/2008 as amended.

Not classified

The product is not classified for chronic aquatic toxicity, for further details see section 16

2.2 Label Elements Not applicable

Supplemental label information

EUH210: Safety data sheet available on request.

Additional Information: No data available.

2.3 Other hazards No data available.

SECTION 3: Composition/information on ingredients

TSE3221S-1K

Chemical nature: Polydimethylsiloxane containing vinyl groups, with Platinum catalyst, fillers and an inhibitor.

3.2 Mixtures

General information: No data available.

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
CYCLOSILOXANE ESTER	1 - <5%	113684-56-3	413-690-7	01-0000016083-78-XXXX	Not applicable	
Dodecamethyl cyclohexasiloxane	0,1 - <1%	540-97-6	208-762-8	01-2119517435-42-XXXX	Not applicable	vPvB
Octamethylcyclotetrasiloxane	0,01 - <0,1%	556-67-2	209-136-7	01-2119529238-36-XXXX	Aquatic Toxicity (Chronic): 10	PBT, vPvB

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

Classification

Chemical name	Classification	Notes
CYCLOSILOXANE ESTER	Aquatic Chronic: 4: H413;	
Dodecamethylcyclohexasiloxane	No data available.	
Octamethylcyclotetrasiloxane	Flam. Liq.: 3: H226; Repr.: 2: H361f; Aquatic Chronic: 1: H410;	No data available.

CLP: Regulation No. 1272/2008.

SECTION 4: First aid measures

General: Get medical attention if symptoms occur.

4.1 Description of first aid measures

Inhalation: Move to fresh air. Get medical attention if symptoms occur.

Eye contact: Rinse the eye with water immediately. If eye irritation persists: Get medical advice/attention.

Skin Contact: After contact with skin, remove product mechanically. Wash area with soap and water.

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water. Consult a physician for specific advice.

TSE3221S-1K

- 4.2 Most important symptoms and effects, both acute and delayed:** None known.
- 4.3 Indication of any immediate medical attention and special treatment needed**
- Hazards:** No information about adverse effects due to exposure.
- Treatment:** If swallowed, do NOT induce vomiting. Give a glass of water.

SECTION 5: Firefighting measures

- General Fire Hazards:** Use standard firefighting procedures and consider the hazards of other involved materials. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- 5.1 Extinguishing media**
- Suitable extinguishing media:** All standard extinguishing agents are suitable.
- Unsuitable extinguishing media:** Avoid water in straight hose stream; will scatter and spread fire.
- 5.2 Special hazards arising from the substance or mixture:** In case of fire, carbon monoxide and carbon dioxide may be formed.
- 5.3 Advice for firefighters**
- Special fire fighting procedures:** Keep away from sources of ignition - No smoking.
- Special protective equipment for fire-fighters:** Wear self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Keep up-wind to avoid fumes.
- 6.2 Environmental Precautions:** Do not allow runoff to sewer, waterway or ground.
- 6.3 Methods and material for containment and cleaning up:** Pick up with vacuum or absorbent solid, store in closed container for disposal. Caution: Contaminated surfaces may be slippery. Clean surface thoroughly to remove residual contamination.
- 6.4 Reference to other sections:** Caution: Contaminated surfaces may be slippery. Prevent runoff from entering drains, sewers, or streams.

SECTION 7: Handling and storage:

- 7.1 Precautions for safe handling:** Use only in well-ventilated areas. Wear appropriate personal protective equipment.
- Storage conditions:** Keep away from sources of ignition - No smoking. Store in original container.
- 7.2 Conditions for safe storage, including any incompatibilities:** Keep in a ventilated and dry location, avoid moisture under any circumstances Store at 10°C or less, with the container tightly closed.

TSE3221S-1K

Storage Stability: Material is stable under normal conditions.

7.3 Specific end use(s): No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

None.

8.2 Exposure controls

Appropriate Engineering Controls:

Eyewash bottle with clean water. Use only in well-ventilated areas.

Individual protection measures, such as personal protective equipment

General information:

Do not eat, drink or smoke when using the product. Wash hands after handling. Eye washes and showers for emergency use. Avoid contact with skin and eyes.

Eye/face protection:

Safety glasses with side-shields conforming to EN166

Skin protection

Hand Protection:

Advice: There is no risk to health due to contact with the chemical. Use hand protection to prevent mechanically injuries.

Other:

No data available.

Respiratory Protection:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

Hygiene measures:

Ensure adequate ventilation, especially in confined areas. Wash hands after handling. When using do not eat, drink or smoke.

Environmental exposure controls:

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:

liquid

Form:

liquid

Color:

Colorless

Odor:

Faint

Odor Threshold:

No data available.

pH:

No data available.

Freezing point:

Not applicable

Boiling Point:

Not applicable

Flash Point:

300 °C

Evaporation Rate:

No data available.

Flammability (solid, gas):

No data available.

Flammability Limit - Upper (%):

No data available.

TSE3221S-1K

Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Relative vapor density:	No data available.
Density:	ca. 1,023 g/cm ³ (23 °C)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	Insoluble
Solubility (other):	Insoluble
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Autoignition Temperature:	450 °C
Decomposition Temperature:	No decomposition if stored and applied as directed.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.

9.2 Other information

Minimum ignition temperature:	ca. 450 °C
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SECTION 10: Stability and reactivity

10.1 Reactivity:	No data available.
10.2 Chemical Stability:	Material is stable under normal conditions.
10.3 Possibility of hazardous reactions:	Hazardous polymerization does not occur.
10.4 Conditions to avoid:	Avoid contact with acids and oxidizing substances.
10.5 Incompatible Materials:	Strong Acids, Strong Bases
10.6 Hazardous Decomposition Products:	Oxides of silicon. Carbon oxides Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

SECTION 11: Toxicological information

General information: Experience has shown, that the above mentioned product can be used without any danger to health, as long as the usual conditions of industrial hygiene are observed.

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

TSE3221S-1K

Acute toxicity

Oral

Product:	ATEmix: 49.792,53 mg/kg
Specified substance(s)	
CYCLOSILOXANE ESTER	LD 50 (Rat): 5.000 mg/kg
Dodecamethylcyclohexas iloxane	LD 50 (Rat): 2.000 mg/kg
Octamethylcyclotetrasilox ane	LD 50 (Rat): > 4.800 mg/kg

Dermal

Product:	Not classified for acute toxicity based on available data.
Specified substance(s)	
CYCLOSILOXANE ESTER	LD 50 (Rat): > 2.000 mg/kg
Dodecamethylcyclohex asiloxane	LD 50 (Rat): 2.000 mg/kg
Octamethylcyclotetrasil oxane	LD 50 (Rat): > 2.375 mg/kg

Inhalation

Product:	Not classified for acute toxicity based on available data.
Specified substance(s)	
CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	No data available.
Octamethylcyclotetrasilox ane	LC50 (Rat, 4 h): 36 mg/l

Repeated dose toxicity

Product:	No data available.
Specified substance(s)	
CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	NOAEL (Rat(male and female), Oral): 1.000 mg/kg
Octamethylcyclotetrasilox ane	No data available.

Skin Corrosion/Irritation:

Product:	No data available.
Specified substance(s)	
CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohex asiloxane	OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) (Rabbit, 72 h): No skin irritation
Octamethylcyclotetrasil oxane	OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) (Rabbit): Slightly irritating.

**Serious Eye Damage/Eye
Irritation:**

Product:	No data available.
Specified substance(s)	
CYCLOSILOXANE ESTER	(Rabbit): No eye irritation

TSE3221S-1K

Dodecamethylcyclohexasiloxane	OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit, 72 h): No eye irritation Not irritating
Octamethylcyclotetrasiloxane	OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit): Non irritating

Respiratory or Skin

Sensitization:

Product: No data available.

Specified substance(s)

CYCLOSILOXANE	Magnusson-Kligmann (Guinea Pig): Did not cause sensitization on laboratory animals.
ESTER	
Dodecamethylcyclohexasiloxane	Maximisation Test, OECD-Guideline 406 (Skin Sensitisation) (Guinea Pig): negative
Octamethylcyclotetrasiloxane	Maximisation Test, OECD-Guideline 406 (Skin Sensitisation) (Guinea Pig): Not sensitizing

Germ Cell Mutagenicity

In vitro

Product: No data available.

Specified substance(s)

CYCLOSILOXANE	No data available.
ESTER	
Dodecamethylcyclohexasiloxane	No data available.
Octamethylcyclotetrasiloxane	Ames-Test (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)): negative (not mutagenic) Mouse Lymphoma Assay (OECD Guideline 476): negative (not mutagenic)

In vivo

Product: No data available.

Specified substance(s)

CYCLOSILOXANE	Micronucleus test Oral (Mouse): negative (not mutagenic)
ESTER	
Dodecamethylcyclohexasiloxane	OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test) (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Intraperitoneal (Mouse, male and female): negative
Octamethylcyclotetrasiloxane	Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Inhalation (Rat, male and female): negative Dominant lethal assay (OECD 478) Oral (Rat, male and female): negative

Carcinogenicity

Product: No data available.

Specified substance(s)

CYCLOSILOXANE	No data available.
ESTER	
Dodecamethylcyclohexasiloxane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Reproductive toxicity

Product: No data available.

Specified substance(s)

CYCLOSILOXANE	No data available.
ESTER	

TSE3221S-1K

Dodecamethylcyclohexas
iloxane No data available.
Octamethylcyclotetrasilox
ane No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s)

CYCLOSILOXANE No data available.
ESTER
Dodecamethylcyclohexas
iloxane No data available.
Octamethylcyclotetrasilox
ane No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Specified substance(s)

CYCLOSILOXANE No data available.
ESTER
Dodecamethylcyclohexas
iloxane No data available.
Octamethylcyclotetrasilox
ane No data available.

Aspiration Hazard

Product: No data available.

Specified substance(s)

CYCLOSILOXANE No data available.
ESTER
Dodecamethylcyclohexas
iloxane No data available.
Octamethylcyclotetrasilox
ane No data available.

Other effects: No data available.

SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

Fish

Product: No data available.

Specified substance(s)

CYCLOSILOXANE No data available.
ESTER
Dodecamethylcyclohexas
iloxane No data available.
Octamethylcyclotetrasilox
ane No data available.

Aquatic Invertebrates

Product: No data available.

Specified substance(s)

SDS_GB

TSE3221S-1K

CYCLOSILOXANE ESTER	EC50 (Daphnia magna, 48 h): > 8 mg/l
Dodecamethylcyclohexas iloxane	No data available.
Octamethylcyclotetrasilox ane	No data available.

Chronic Toxicity

Fish

Product: No data available.

Specified substance(s)

CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	NOEC (Pimephales promelas, 49 d): 0,0044 mg/l
Octamethylcyclotetrasilox ane	No data available.

Aquatic Invertebrates

Product: No data available.

Specified substance(s)

CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	NOEC (Daphnia magna, 21 d): 0,0046 mg/l EC50 (Sediment Invertebrate, 28 d): > 420 mg/l LOEC (Sediment Invertebrate, 28 d): >= 420 mg/l
Octamethylcyclotetrasilox ane	No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s)

CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	EC50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 0,002 mg/l (OECD Test Guideline 201) NOEC (Algae (Pseudokirchneriella subcapitata), 72 h): >= 0,002 mg/l (OECD Test Guideline 201)
Octamethylcyclotetrasilox ane	No data available.

12.2 Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s)

CYCLOSILOXANE ESTER	No data available.
Dodecamethylcyclohexas iloxane	No data available.
Octamethylcyclotetrasilox ane	(29 d, 310 Ready Biodegradability - CO ₂ in Sealed Vessels (Headspace Test)): 3,7 % Persistent Not readily biodegradable.

BOD/COD Ratio

Product: No data available.

Specified substance(s)

TSE3221S-1K

CYCLOSILOXANE ESTER No data available.
Dodecamethylcyclohexasiloxane No data available.
Octamethylcyclotetrasiloxane No data available.

12.3 Bioaccumulative potential

Product: No data available.

Specified substance(s)

CYCLOSILOXANE ESTER No data available.
Dodecamethylcyclohexasiloxane No data available.
Octamethylcyclotetrasiloxane Fathead Minnow, Bioconcentration Factor (BCF): 12,40

12.4 Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

CYCLOSILOXANE ESTER No data available.
Dodecamethylcyclohexasiloxane No data available.
Octamethylcyclotetrasiloxane No data available.

12.5 Results of PBT and vPvB assessment:

vPvB: very persistent and very bioaccumulative substance.

CYCLOSILOXANE ESTER No data available.
Dodecamethylcyclohexasiloxane vPvB: very persistent and very bioaccumulative substance.

Dodecamethylcyclohexasiloxane (D6) meets the current EU REACH Annex XIII criteria for vPvB and has been added to the candidate list for Substances of very high concern (SVHC)., *However our understanding of the available science is that D6 does not behave similarly to known PBT/vPvB substances. The silicones industries interpretation of the available data is that the weight of scientific evidence from field studies shows that D6 is not biomagnifying in aquatic and terrestrial food webs. D6 in air will degrade by naturally occurring reactions in the atmosphere. Any D6 in air that does not degrade by these reactions is not expected to deposit from the air to water, to land, or to living organisms*

Octamethylcyclotetrasiloxane Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB)

Octamethylcyclotetrasiloxane (D4) meets the current EU REACH Annex XIII criteria for PBT and vPvB and has been added to the candidate list for Substances of very high concern (SVHC)., *However our understanding of the available science is that D4 does not behave similarly to known PBT/vPvB substances. The silicones industries interpretation of the available data is that the weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by naturally occurring reactions in the atmosphere. Any D4 in air that does not degrade by these reactions is not expected to deposit from the air to water, to land, or to living organisms.*

TSE3221S-1K

12.6 Other adverse effects: No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: The generation of waste should be avoided or minimized wherever possible. See Section 8 for information on appropriate personal protective equipment. Do not discharge into drains, water courses or onto the ground.

Disposal methods: Can be incinerated when in compliance with local regulations.

SECTION 14: Transport information

ADR

Not regulated.

ADN

Not regulated.

RID

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

14.6 Special precautions for user: Keep away from food, drink and animal feeding stuffs. This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

14.7 Transport in bulk according to Annex 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:

EU Regulations

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: none

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: none

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: none

TSE3221S-1K

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals: none

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended: none

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC):

Chemical name	CAS-No.	Concentration
Dodecamethylcyclohexasiloxane	540-97-6	0 - <=0,1251%

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use: none

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.: none

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.: none

Directive 2012/18/EU (Seveso III): on the control of major accident hazards involving dangerous substances: none

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants: none

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work: none

15.2 Chemical safety assessment:

No Chemical Safety Assessment has been carried out.

Inventory Status

Australia AICS:	q (quantity restricted)	Remarks: None.
Canada DSL Inventory List:	q (quantity restricted)	Remarks: None.
EU EINECS List:	y (positive listing)	Remarks: None.
Japan (ENCS) List:	y (positive listing)	Remarks: None.
China Inv. Existing Chemical Substances:	y (positive listing)	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	y (positive listing)	Remarks: None.
Canada NDSL Inventory:	n (negative listing)	Remarks: None.
Philippines PICCS:	y (positive listing)	Remarks: None.
US TSCA Inventory:	y (positive listing)	Remarks: None.
New Zealand Inventory of Chemicals:	y (positive listing)	Remarks: None.
Taiwan Chemical Substance Inventory:	y (positive listing)	Remarks: None.

TSE3221S-1K

REACH:

If purchased from Momentive Performance Materials GmbH in Leverkusen, Germany, all substances in this product have been registered by Momentive Performance Materials GmbH or upstream in our supply chain or are exempt from registration under Regulation (EC) No 1907/2006 (REACH). For polymers, this includes the constituent monomers and other reactants.

Remarks: None.

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data: The partition coefficient of D4 between PDMS and water has been determined as $\log K_{PDMS-water} = 7.09$. It follows that PDMS containing up to 3%w/w D4 will generate a thermodynamic limit concentration of 2.4 µg D4/L in the water phase. The critical 21d-NOEC for daphnia of 7.9 µg D4/L will not be reached. The product is therefore not classified for chronic aquatic toxicity

Wording of the H-statements in section 2 and 3

H226	Flammable liquid and vapor.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Training information: No data available.

Issue Date: 01.02.2022

TSE3221S-1K

Disclaimer:

Notice to reader

Unless otherwise specified in section 1.2, Momentive Products are intended for industrial application only.

They are not intended for specific medical applications, neither for long-lasting (> 30 days) implantation into the human body, injected or directly ingested, nor for the manufacture of multiple usable contraceptives.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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