

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 1 /14

1 - IDENTIFICATION

Product identifier	SG250
Product code	0H00-60WD-M00X-TW3H
Recommended use of the chemical and restrictions on use	Plating agent
Company	Hottinger Brüel & Kjaer
Address	19 Bartlett st. Marlborough, MA 01590
Telephone number	+1.508.804.3268
Emergency telephone number	Chemtrec: 1-800-424-9300. International: 1-703-527-3887
E-mail	support@hbm.com

2 - HAZARDS IDENTIFICATION

Classification of the chemical	Reproductive toxicity – Category 2
Signal word	WARNING
Hazard statement(s)	H361 Suspected of damaging fertility or the unborn child.

Symbol(s)



PREVENTION

P203 Obtain, read, and follow all safety instructions before use.
P280 Wear protective gloves, protective clothing, eye protection, face protection.

RESPONSE

P318 IF exposed or concerned, get medical advice.

STORAGE

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 2 /14

P405 Store locked up.

DISPOSAL

P501 Dispose of contents and container according to current regulations.

Hazard Communication Standard (HCS) 29 CFR: 1910.1200 - Appendix A.

Adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations, 8 ed.

Classification system adopted

Other hazards which do not result in classification

The product has no other hazards.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

MIXTURE

Impurities and stabilizing additives contributing to the hazard (%m):

Components	Concentration %	Number CAS	GHS Classification*
Trimethoxymethylsilan	≥ 2,1- ≥ 3,5%	1185-55-3	H225
Dodecamethylcyclohexasiloxane	≥ 0,77-≤ 0,9%	540-97-6	Not classified as dangerous
Octamethylcyclotetrasiloxane	≥ 0,1- < 0,3%	556-67-2	H226; H361; H413
Decamethylcyclopentassiloxane	≥ 0,06 - < 0,18%	541-02-6	Not classified as dangerous

* Hazard statements are described in section 16.

4 - FIRST-AID MEASURES

Inhalation

Remove the victim to a ventilated place and keep him at rest in a position that does not make breathing difficult. If you feel unwell, contact a POISON CENTER or a doctor. Take this SDS.

Skin contact

Remove all contaminated clothing. Rinse skin with soap and water or take a shower. If necessary, call a POISON CENTER

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 3 /14

Eye contact	<p>or doctor / physician. Take this SDS. Rinse thoroughly with water for minutes. If using contact lenses, remove them if it is easy. If eye irritation persists consult a doctor. Take this SDS.</p>
Ingestion	<p>Do not induce vomiting. Do not give anything by mouth to an unconscious person. Rinse victim's mouth with plenty of water. If vomiting occurs, tilt the patient forward or place the patient on the left side (if possible upwards) to keep the airway open and prevent aspiration. Keep the patient silent and maintain normal body temperature. Consult a POISON CENTER or doctor. Take this SDS.</p>
Most important symptoms and effects, acute and delayed	<p>Suspected of damaging fertility or the unborn child.</p>
Indication of any immediate medical attention and special treatment needed	<p>Avoid contact with the product when helping the victim. Exposure treatment should be directed towards the control of the patient's symptoms and clinical condition. In case of contact with the skin, do not rub the affected area.</p>

5 - FIRE-FIGHTING MEASURES

Extinguishing media	<p>Suitable: Compatible with water spray, dry chemical, alcohol resistant foam, or carbon dioxide (CO₂).</p> <p>Unsuitable: Water jet directly under the burning product.</p>
Specific hazards arising from the chemical product	<p>The combustion of the chemical products or containers may form toxic and irritating gases such as carbon monoxide (CO), carbon dioxide (CO₂) and carbon black.</p>
Specific extinguishing methods	<p>Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing. Containers and tanks involved in the fire should be cooled with water laterally.</p>

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 4 /14

6 - ACCIDENTAL RELEASE MEASURES

Personal precautions	Do not smoke. Avoid contact with the product. If necessary, use personal protective equipment as described in section 8.
Protective equipment	Use protective equipment as described in Section 8. Wear PPE complete with safety glasses, butyl rubber safety gloves, suitable protective clothing, and closed shoes. The material used must be waterproof. In case of leakage, where
Emergency procedures	exposure is high, the use of a respirator with a for filter for mists and vapors. Isolate spills from ignition sources. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk.
Environmental precautions	Prevent the product from reaching the soil and water courses. Notify the relevant authorities if the product has caused environmental pollution (if it has reached water courses or if it has contaminated the soil or vegetation).
Methods and materials for containment	Absorb the remaining product with dry sand, earth, vermiculite, or any other inert material.
Methods and materials for cleaning up	Collect spilled product and place in suitable containers. Place the adsorbed material in appropriate containers and remove them to a safe place. For final destination, proceed according to Section 13 of this SDS.

7- HANDLING AND STORAGE

Precautions for safe handling	Handle in a ventilated area or with a general local ventilation / exhaust system. Avoid formation of mists and vapors. Avoid exposure to the product. Avoid contact with incompatible materials. Use personal protective equipment as described in section 8. Wash hands and face thoroughly after handling and before eating, drinking, smoking, or using the bathroom. Contaminated clothing must be changed and washed before reuse.
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SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 5 /14

Conditions for safe storage, including any incompatibilities

Store in a well-ventilated, dry, cool place away from sunlight. Keep the packaging tightly closed and in an area accessible only to authorized persons. Keep away from sources of ignition and heat. Keep away from incompatible materials. The product may be incompatible with strong oxidizing agents.

8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Occupational exposure limit Not established.

Biological limit Not established.

Appropriate engineering controls

Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product.

Individual protection measures, such as personal protective equipment

Respiratory protection

Use respiratory protection equipment filter for mists and vapors. Based on the inhalation hazard of the product, a risk assessment must be carried out to adequately define respiratory protection in view of the conditions of use of the product.

Hand protection

Nitrile rubber safety gloves, suitable protective clothing, and closed shoes.

Eye protection

Safety glasses with side protection.

Skin and body protection

Proper protective clothing and closed shoes are recommended.

Special precautions

Not applicable.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 6 /14

Appearance (physical state, color, etc.)	Paste, whitish.
Odour	Neutral.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling, and boiling range	Not available.
Flashpoint	> 100°C.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odour threshold	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Viscosity	Not available.
Other information	Not available.

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 7 /14

10 - STABILITY AND REACTIVITY

Reactivity and Chemical stability	Product is stable under normal conditions of temperature and pressure.
Possibility of hazardous reactions	The product can react dangerously in contact with incompatible materials.
Conditions to avoid	High temperatures, heat, friction and contact with incompatible materials.
Incompatible material	The product may be incompatible with strong oxidizing agents.
Hazardous decomposition products	Decomposition of product may generate toxic gases such as CO, CO ₂ , carbon black and nitrogen oxides (NO _x).

11 - TOXICOLOGICAL INFORMATION

Acute toxicity	<p>The product is not expected to be toxic to the oral, dermal or inhalation routes.</p> <p><u>Octamethylcyclotetrasiloxane:</u> LC₅₀ (inhalation, rats, 4 h): > 36 mg/L.</p> <p><u>Decamethylcyclopentasiloxane:</u> LC₅₀ (inhalation, rats): 8.67 mg/L.</p> <p>The product is not expected to cause skin irritation.</p>
Skin irritation/corrosion	<p><u>Octamethylcyclotetrasiloxane:</u> Rabbit, 24 h: Non-irritating.</p> <p><u>Decamethylcyclopentasiloxane:</u> Rabbit: Not annoying.</p> <p><u>Dodecamethylcyclohexasiloxane:</u> OECD 404 (Rabbit): Non-irritating.</p>
Eye damage/irritation	<p>The product is not expected to cause eye irritation.</p> <p><u>Octamethylcyclotetrasiloxane:</u> Rabbit, 24 h: Non-irritating.</p> <p><u>Decamethylcyclopentasiloxane:</u></p>

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 8 /14

Respiratory or skin sensitization	<p>Rabbit: Not annoying.</p> <p><u>Dodecamethylcyclohexasiloxane:</u> OECD 405 (Rabbit): Non-irritating. Not expected to cause respiratory or skin sensitization.</p> <p><u>Octamethylcyclotetrasiloxane:</u> Guinea Pig: Does not cause skin sensitization.</p> <p><u>Decamethylcyclopentasiloxane:</u> Does not cause skin sensitization.</p> <p><u>Dodecamethylcyclohexasiloxane:</u> OECD 406 (Guinea pig): Does not cause skin sensitization. It is not expected to have mutagenic potential.</p> <p><u>Octamethylcyclotetrasiloxane:</u> Ames Test - Bacteria: No mutagenic components identified. Chromosomal aberration: No mutagenic components identified. In vitro assay for genetic mutations in mammalian cells: No mutagenic components has been identified.</p>
Reproductive cell mutagenicity	<p><u>Decamethylcyclopentasiloxane:</u> Chromosomal aberration: No mutagenic components identified. Ames test - Bacteria: No mutagenic components identified.</p> <p><u>Dodecamethylcyclohexasiloxane:</u> Mouse lymphoma cells (OECD 476): negative with and without metabolic activation. Ames Test - Bacteria (OECD 471): negative with and without metabolic activation. Mammalian erythrocyte micronucleus assay (OECD 474): No mutagenic effects. The product is not expected to cause cancer.</p>
Carcinogenicity	<p><u>Octamethylcyclotetrasiloxane:</u> Rat (Female, Male, Inhalation): (OECD 453) Carcinogenic potential is not expected. No effects are expected. NOAEC: ≥ 8.492 mg/L (Rat; Female, Male; Inhalation - steam); Method: Similar to OECD 453.</p>

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 9 /14

	<p><u>Decamethylcyclopentasiloxane:</u> NOAEC: ≥ 2.42 mg/l (Rat; Female, Male; Inhalation - vapor) Method: Similar to OECD 453. Suspected of damaging fertility or the unborn child.</p>
Reproductive toxicity	<p><u>Octamethylcyclotetrasiloxane:</u> Studies conducted with experimental animals show that the ingredient presents toxicity to fetal development and reproduction. Two-generation fertilization study Rat (Inhalation): NOAEL (parent): 3.64 mg/L NOAEL (F1): None. NOAEL (F2): None. Method: OECD 416.</p>
Specific target organ toxicity – single exposure	Is not expected that the product to cause target organ toxicity from single exposure.
Specific target organ toxicity – repeated exposure	Is not expected that the product to cause target organ toxicity from repeated exposure.
Aspiration hazard	It is not expected that the product presents aspiration hazard.

12 - ECOLOGICAL INFORMATION

Environmental effects, behavior, and fate of the product

The product is not expected to be harmful to aquatic organisms.

Ecotoxicity	<p><u>Octamethylcyclotetrasiloxane:</u> LC₅₀ (<i>Oncorhynchus mykiss</i>, 96 h): ≥ 0.022 mg/L. EC₅₀ (<i>Daphnia magna</i>, 48 h): > 0.015 mg/L. NOEC (<i>Oncorhynchus mykiss</i>, 93 d): ≥ 0.0044 mg/L. NOEC (<i>Daphnia magna</i>, 21 d): 0.015 mg/L. EC₅₀ (<i>Green Algae</i>, 96 h): > 0.022 mg/L.</p> <p><u>Decamethylcyclopentasiloxane:</u> NOEC (<i>Oncorhynchus mykiss</i>, 96 h): ≥ 0.016 mg/L. LC₅₀ (<i>Oncorhynchus mykiss</i>; 96 h): > 0.016 mg/L OECD 204. EC₅₀ (<i>Daphnia magna</i>, 48 h): > 0.0029 mg/L OECD 202. NOEC (<i>Daphnia magna</i>, 48 h): ≥ 0.0029 mg/L OECD 202.</p>
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SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 10 /14

	<p>EC₅₀ (<i>Pseudokirchneriella subcapitata</i>, 96h): > 0.012 mg/L OECD 201.</p> <p>NOEC (<i>Pseudokirchneriella subcapitata</i>, 96h): ≥ 0.012 mg/L OECD 201.</p> <p><u>Dodecamethylcyclhexasiloxane:</u></p> <p>LC₅₀ (<i>Oncorhynchus mykiss</i>; 96 h): > 0.016 mg/L OECD 204.</p> <p>EC₅₀ (<i>Daphnia magna</i>, 48 h): > 0.0029 mg/L OECD 202.</p> <p>NOEC (<i>Daphnia magna</i>, 21 d): ≥ 0.0046 mg/L.</p> <p>NOEC (<i>Pseudokirchneriella subcapitata</i>), 72 h): ≥ 0.002 mg/L.</p> <p>EC₅₀ (<i>Pseudokirchneriella subcapitata</i>, 72 h): > 0.002 mg/L.</p>
Persistence and degradability	<p>The product is not expected to show persistence, it is expected to be rapidly degraded.</p> <p>The product is expected to have low bioaccumulative potential in aquatic organisms.</p>
Bioaccumulative potential	<p><u>Octamethylcyclotetrasiloxane:</u></p> <p>Bioconcentration Factor (BCF): 12,400 (Fathead Minnow).</p> <p><u>Decamethylcyclopentasiloxane:</u></p> <p>Bioconcentration Factor (BCF): 7,060 (Fathead Minnow).</p> <p><u>Dodecamethylcyclhexasiloxane:</u></p> <p>Bioconcentration Factor (BCF): 2,860 (OECD305) Fathead Minnow). It can accumulate biologically.</p>
Mobility in soil:	Not available.
Other adverse effects	There are not known adverse environmental effects of the product.

13 - DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated	<p>Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.</p> <p>Keep product residues in their original containers and properly closed. Disposal should be in accordance with the regulations for the product.</p>
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SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 11 /14

packaging: Do not reuse empty containers. These may contain product residues and should be kept closed and sent for appropriate disposal as established for the product.

14 - TRANSPORT INFORMATION

International regulations

Land: UN – “United Nations”
Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations
DOT - U.S. Department of Transportation

Sea: IMO – International Maritime Organization
International Maritime Dangerous Goods Code (IMDG Code)

Air: IATA – International Air Transport Association
Dangerous Goods Regulation (DGR)

UN number: Not classified as dangerous according to transport modes.
Consult regulations:
- International Maritime Organization. MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006.
- International Maritime Organization. IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.

Transport in bulk according to MARPOL 73/78, Annex II, and the IBC Code:

Special precautions: There is no need of special precautions.

15 - REGULATORY INFORMATION

Safety, health, and environmental International Labor Organization C170 Chemicals Convention, from June 25th, 1990: Occupational Safety and Health – Toxic

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 12 /14

regulations/legislation
specific for the substance
or mixture

Substances and Agents.
Hazard Communication Standard (HCS) 29 CFR: 1910.1200 -
Appendix A, B, C, D, E, F.
GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION
AND LABELLING OF CHEMICALS (GHS). 8. rev. ed.
U.S. Federal Regulations: United States inventory (TSCA):
Trimethoxymethylsilan, Dodecamethylcyclohexasiloxane,
Octamethylcyclotetrasiloxane and
Decamethylcyclopentasiloxane are listed.
California Proposition 65: Ingredients are not listed.

16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

SDS elaborated in September 2021.

Hazard phrases described in section 3:

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H361 Suspected of damaging fertility or the unborn child.

H413 May cause long lasting harmful effects to aquatic life.

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists

CAS – Chemical Abstracts Service

LC₅₀ – Lethal Concentration 50%

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 13 /14

LD₅₀ – Lethal Dose 50%

ERPG - Emergency Response Planning Guidelines

NIOSH – National Institute of Occupational Safety and Health

OSHA – Occupational Safety & Health Administration

PEL – Permissible Exposure Limit

REL – Recommended Exposure Limit

STEL – Short Term Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

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GHS. Globally Harmonized System of Classification and Labelling of Chemicals. 8. rev. ed. New York: United Nations, 2019.

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SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: SG250

Revision: 00

Date: 9/13/2021

Pages: 14 /14

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