SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: CC-8033

Issue Date: 07/06/2022
Print Date: 07/06/2022

RESEARCH SAMPLE.

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: CC-8033

Recommended use of the chemical and restrictions on use
Identified uses: Research sample.

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Flammable liquids - Category 3
Skin irritation - Category 2
Serious eye damage - Category 1
Skin sensitisation - Category 1
Reproductive toxicity - Category 2
Specific target organ toxicity - repeated exposure - Category 2
Specific target organ toxicity - repeated exposure - Category 2 - Oral

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
Flammable liquid and vapour.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Suspected of damaging fertility or the unborn child.
May cause damage to organs (Kidney) through prolonged or repeated exposure.
May cause damage to organs (Liver) through prolonged or repeated exposure if swallowed.

Precautionary statements

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe mist or vapours.
Wash skin thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves, protective clothing, eye protection and/or face protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER and/or doctor.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal
Dispose of contents and/or container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Treated Silica	Trade secret	>= 6.2 - <= 27.9 %
Methyltrimethoxysilane	1185-55-3	>= 0.039 - <= 10.0 %
Silane	Trade secret	<= 5.0 %
1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	1025-15-6	<= 5.0 %
Dimethyldimethoxysilane	1112-39-6	<= 5.0 %
Silane	Trade secret	<= 4.97 %
phosphine oxide	Trade secret	<= 3.0 %
Dimethoxy-1-phenylacetophenone	24650-42-8	<= 3.0 %
Di-t-butyl-p-cresol	128-37-0	>= 0.05 - <= 1.0 %
Hydroxyacetophenone	Trade secret	<= 1.0 %
phosphine oxide	Trade secret	<= 1.0 %
Tempo A.I.	2564-83-2	<= 1.0 %
Dimethyl Cyclosiloxanes	69430-24-6	>= 0.082 - <= 0.85 %

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing; consult a physician.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash

occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Rinse mouth with water. No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical. Dry sand.

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

Special hazards arising from the substance or mixture

Hazardous combustion products: Silicon oxides. Formaldehyde. Carbon oxides. Sulphur oxides. Nitrogen oxides (NOx). Formaldehyde.. Oxides of phosphorus.

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.. Flammable mixtures may exist within the vapor space of containers at room temperature.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Use personal protective equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Do not get in eyes. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.
Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ground and bond container and receiving equipment.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Gases.
Unsuitable materials for containers**:** None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Treated Silica	Dow IHG	TWA Respirable fraction	0.1 mg/m3
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	Further information: Skin Sensitizer		
Silane	Dow IHG	TWA Aerosol	0.1 mg/m3
Silane	Dow IHG	TWA	0.5 ppm
Di-t-butyl-p-cresol	ACGIH	TWA Inhalable fraction and vapor	2 mg/m3
	Further information: A4: Not classifiable as a human carcinogen		

Exposure controls
Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures
Eye/face protection: Use chemical goggles.
Skin protection
Hand protection: Use gloves chemically resistant to this material.
Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Translucent
Odor	Sulfur-like
Odor Threshold	No test data available
pH	No data available
Melting point/range	No data available.
Freezing point	No data available.
Boiling point (760 mmHg)	No data available

Flash point	**closed cup** 54 °C (129 °F) *Estimated.* **open cup** *No data available.*
Evaporation Rate (Butyl Acetate = 1)	Not available
Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	Liquid.
Upper explosion limit	Liquid.
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	Not applicable
Partition coefficient: n-octanol/water	This product is a mixture. See Section 12 for individual component data.
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	*No information available.*
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	*Not reported*

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Flammable liquid and vapour.

Conditions to avoid: Avoid static discharge. Heat, flames and sparks.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products:
Decomposition products can include and are not limited to: Formaldehyde. Methanol. Irritating fumes. Phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure
Inhalation, Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

Information for the Product:

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):
LD50, Rat, > 5,000 mg/kg Estimated.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials: LD50, Rat, > 2,000 mg/kg OECD 401 or equivalent No deaths occurred at this concentration.

Methyltrimethoxysilane
LD50, Rat, male and female, 11,685 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Silane
LD50, Rat, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
LD50, Rat, female, 812 mg/kg OECD Test Guideline 401

LD50, Rat, male, 707 mg/kg OECD Test Guideline 401

Dimethyldimethoxysilane
LD50, Rat, > 2,000 - 5,000 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Silane
LD50, Rat, male and female, 8,025 mg/kg OECD 401 or equivalent

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

phosphine oxide
LC50, Rat, > 5,000 mg/kg OECD Test Guideline 401

Dimethoxy-1-phenylacetophenone
LD50, Rat, > 6,000 mg/kg

Di-t-butyl-p-cresol
LD50, Rat, > 6,000 mg/kg OECD Test Guideline 401

Hydroxyacetophenone
LD50, Rat, male and female, 1,694 mg/kg OECD Test Guideline 401

phosphine oxide
LD50, Rat, male and female, > 2,000 mg/kg OECD 401 or equivalent No deaths occurred at this concentration.

Tempo A.I.
Single dose oral LD50 has not been determined.

Dimethyl Cyclosiloxanes
LD50, Rat, > 20,000 mg/kg

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, Rabbit, > 5,000 mg/kg Estimated.

Information for components:

Treated Silica
For similar material(s): LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

The dermal LD50 has not been determined.

Methyltrimethoxysilane
LD50, Rabbit, male and female, > 9,500 mg/kg OECD 402 or equivalent

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

Silane
LD50, Rat, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
LD50, Rat, > 1,000 - < 2,000 mg/kg Estimated.

Dimethyldimethoxysilane
The dermal LD50 has not been determined.

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

Silane
LD50, Rabbit, male, 4,250 mg/kg OECD 402 or equivalent

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

phosphine oxide
LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Dimethoxy-1-phenylacetophenone
LD50, Rabbit, > 7,100 mg/kg

Di-t-butyl-p-cresol
LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Hydroxyacetophenone
LD50, Rat, male and female, 6,929 mg/kg OECD Test Guideline 402

phosphine oxide
LD50, Rat, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

Tempo A.I.
The dermal LD50 has not been determined.

Dimethyl Cyclosiloxanes
The dermal LD50 has not been determined.

Acute inhalation toxicity

Information for the Product:

Based on information for component(s): Prolonged excessive exposure may cause adverse effects. Vapor may cause irritation of the upper respiratory tract (nose and throat). In humans, symptoms may include: Coughing. Shortness of breath. Headache. Nausea and/or vomiting.

As product: The LC50 has not been determined.

Information for components:

Treated Silica
The LC50 has not been determined.

Methyltrimethoxysilane
LC50, Rat, male and female, 6 Hour, vapour, > 7605 ppm OECD Test Guideline 403

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

Silane
LC50, Rat, male and female, 4 Hour, dust/mist, > 2.28 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
The LC50 has not been determined.

Dimethyldimethoxysilane
LC50, Rat, 4 Hour, vapour, > 4.7 mg/l

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

Silane
LC50, Rat, 4 Hour, dust/mist, > 5.3 mg/l

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

phosphine oxide
The LC50 has not been determined.

Dimethoxy-1-phenylacetophenone
The LC50 has not been determined.

Di-t-butyl-p-cresol

The LC50 has not been determined.

Hydroxyacetophenone
Prolonged excessive exposure may cause adverse effects.

phosphine oxide
The LC50 has not been determined.

Tempo A.I.
Prolonged excessive exposure may cause adverse effects. Coughing. Shortness of breath. Headache. Nausea and/or vomiting. Dust may cause irritation to upper respiratory tract (nose and throat).

The LC50 has not been determined.

Dimethyl Cyclosiloxanes
The LC50 has not been determined.

Skin corrosion/irritation

Information for the Product:

Based on information for component(s):
Brief contact may cause severe skin irritation with pain and local redness.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials:
Brief contact is essentially nonirritating to skin.

Methyltrimethoxysilane
Brief contact may cause slight skin irritation with local redness.

Silane
Brief contact may cause slight skin irritation with local redness.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Brief contact may cause slight skin irritation with local redness.

Dimethyldimethoxysilane
Brief contact is essentially nonirritating to skin.

Silane
Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause moderate skin irritation with local redness.

phosphine oxide
Brief contact is essentially nonirritating to skin.

Dimethoxy-1-phenylacetophenone
Brief contact may cause slight skin irritation with local redness.

Di-t-butyl-p-cresol

Brief contact is essentially nonirritating to skin.
Prolonged contact may cause slight skin irritation with local redness.

Hydroxyacetophenone
Brief contact may cause slight skin irritation with local redness.

phosphine oxide
Brief contact is essentially nonirritating to skin.

Tempo A.I.
Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Dimethyl Cyclosiloxanes
Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

Information for the Product:

Based on information for component(s):
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials:
May cause irritation or corneal injury due to mechanical action.

Methyltrimethoxysilane
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Silane
May cause slight eye irritation.
Corneal injury is unlikely.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Essentially nonirritating to eyes.
Corneal injury is unlikely.

Dimethyldimethoxysilane
Essentially nonirritating to eyes.

Silane
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

phosphine oxide
May cause slight eye irritation.
Corneal injury is unlikely.

Dimethoxy-1-phenylacetophenone

May cause slight eye irritation.

Di-t-butyl-p-cresol
May cause slight eye irritation.
May cause slight temporary corneal injury.

Hydroxyacetophenone
May cause slight temporary eye irritation.

phosphine oxide
May cause slight eye irritation.
Corneal injury is unlikely.

Tempo A.I.
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Dimethyl Cyclosiloxanes
May cause slight eye irritation.

Sensitization

Information for the Product:

Contains component(s) which have caused allergic skin sensitization in guinea pigs.
Contains component(s) which have demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Information for components:

Treated Silica
For skin sensitization:
Based on testing for product(s) in this family of materials:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Methyltrimethoxysilane
For skin sensitization:
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Silane
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Dimethyldimethoxysilane
For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Silane
Did not cause allergic skin reactions when tested in guinea pigs.
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

phosphine oxide
Has demonstrated the potential for contact allergy in mice.

No relevant data found.

Dimethoxy-1-phenylacetophenone
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Di-t-butyl-p-cresol
Skin contact may cause an allergic skin reaction in a small proportion of individuals.

For respiratory sensitization:
No relevant data found.

Hydroxyacetophenone
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

phosphine oxide
For skin sensitization:
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Tempo A.I.

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Dimethyl Cyclosiloxanes
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Information for the Product:

Available data are inadequate to determine single exposure specific target organ toxicity.

Information for components:

Treated Silica
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Methyltrimethoxysilane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Silane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Dimethyldimethoxysilane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Silane
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

phosphine oxide
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Dimethoxy-1-phenylacetophenone
Available data are inadequate to determine single exposure specific target organ toxicity.

Di-t-butyl-p-cresol
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Hydroxyacetophenone
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

phosphine oxide
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Tempo A.I.

Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Dimethyl Cyclosiloxanes
Available data are inadequate to determine single exposure specific target organ toxicity.

Aspiration Hazard

Information for the Product:

Based on available information, aspiration hazard could not be determined.

Information for components:

Treated Silica
Based on physical properties, not likely to be an aspiration hazard.

Methyltrimethoxysilane
Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

Silane
Based on available information, aspiration hazard could not be determined.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Based on physical properties, not likely to be an aspiration hazard.

Dimethyldimethoxysilane
Based on physical properties, not likely to be an aspiration hazard.

Silane
Based on available information, aspiration hazard could not be determined.

phosphine oxide
Based on available information, aspiration hazard could not be determined.

Dimethoxy-1-phenylacetophenone
Based on physical properties, not likely to be an aspiration hazard.

Di-t-butyl-p-cresol
Based on physical properties, not likely to be an aspiration hazard.

Hydroxyacetophenone
Based on physical properties, not likely to be an aspiration hazard.

phosphine oxide
Based on physical properties, not likely to be an aspiration hazard.

Tempo A.I.
Based on physical properties, not likely to be an aspiration hazard.

Dimethyl Cyclosiloxanes
Based on available information, aspiration hazard could not be determined.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Information for the Product:

Contains component(s) which have been reported to cause effects on the following organs in animals:
Liver.
Blood.
Testes
Kidney
BHT is toxic only at concentrations much higher than normally consumed in man, causing organ changes (liver, lung, brain, thyroid, kidney) and anti-clotting effects; however, it may enhance or inhibit the effects of other substances.
This material contains dimethyldimethoxysilane. Repeated exposure in rats to dimethyldimethoxysilane resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Information for components:

Treated Silica
No relevant data found.

Methyltrimethoxysilane
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Silane
No relevant data found.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
In animals, effects have been reported on the following organs:
Liver.

Dimethyldimethoxysilane
In animals, effects have been reported on the following organs:
Liver
Male reproductive organs.
This material contains dimethyldimethoxysilane. Repeated exposure in rats to dimethyldimethoxysilane resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Silane
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Dimethoxy-1-phenylacetophenone

Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.
Route of Exposure: Ingestion
Target Organs: Kidney

Di-t-butyl-p-cresol
BHT is toxic only at concentrations much higher than normally consumed in man, causing organ changes (liver, lung, brain, thyroid, kidney) and anti-clotting effects; however, it may enhance or inhibit the effects of other substances.

Hydroxyacetophenone
In animals, effects have been reported on the following organs:
Liver

phosphine oxide
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Tempo A.I.
No relevant data found.

Dimethyl Cyclosiloxanes
No relevant data found.

Carcinogenicity

Information for the Product:

No relevant data found.

Information for components:

Treated Silica
No relevant data found.

Methyltrimethoxysilane
No relevant data found.

Silane
No relevant data found.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
No relevant data found.

Dimethyldimethoxysilane
No relevant data found.

Silane
Did not cause cancer in laboratory animals.

phosphine oxide
No relevant data found.

Dimethoxy-1-phenylacetophenone

No relevant data found.

Di-t-butyl-p-cresol
It is generally recognized that at high doses BHT may act as a promoter or inhibitor of certain tumor formation in laboratory animals; at the maximum acceptable daily intake for man it is not believed to cause cancer.

Hydroxyacetophenone
No relevant data found.

phosphine oxide
No relevant data found.

Tempo A.I.
No relevant data found.

Dimethyl Cyclosiloxanes
No relevant data found.

Teratogenicity

Information for the Product:

Contains component(s) which, in laboratory animals, have been toxic to the fetus only at doses toxic to the mother. Contains component(s) which caused birth defects in laboratory animals.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials: Did not cause birth defects or any other fetal effects in laboratory animals.

Methyltrimethoxysilane
Did not cause birth defects or any other fetal effects in laboratory animals.

Silane
Has caused birth defects in laboratory animals only at doses toxic to the mother.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Dimethyldimethoxysilane
Has caused birth defects in laboratory animals.

Silane
Did not cause birth defects or any other fetal effects in laboratory animals.

phosphine oxide
No relevant data found.

Dimethoxy-1-phenylacetophenone
No relevant data found.

Di-t-butyl-p-cresol
Did not cause birth defects in laboratory animals.

Hydroxyacetophenone
Did not cause birth defects or any other fetal effects in laboratory animals.

phosphine oxide
Did not cause birth defects or any other fetal effects in laboratory animals.

Tempo A.I.
No relevant data found.

Dimethyl Cyclosiloxanes
No relevant data found.

Reproductive toxicity

Information for the Product:

Contains component(s) which have interfered with fertility in animal studies.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials: In animal studies, did not interfere with reproduction.

Methyltrimethoxysilane
In animal studies, did not interfere with reproduction.

Silane
No relevant data found.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
In animal studies, did not interfere with reproduction.

Dimethyldimethoxysilane
In animal studies, has been shown to interfere with fertility.

Silane
In animal studies, did not interfere with reproduction.

phosphine oxide
No relevant data found.

Dimethoxy-1-phenylacetophenone
No relevant data found.

Di-t-butyl-p-cresol
Available data are inadequate to determine effects on reproduction.

Hydroxyacetophenone
No relevant data found.

phosphine oxide
No relevant data found.

Tempo A.I.
No relevant data found.

Dimethyl Cyclosiloxanes
For similar material(s): In animal studies, has been shown to interfere with fertility.

Mutagenicity

Information for the Product:

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in some animal genetic toxicity studies and positive in others.

Information for components:

Treated Silica
Based on testing for product(s) in this family of materials: In vitro genetic toxicity studies were negative.

Methyltrimethoxysilane
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Silane
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Dimethyldimethoxysilane
In vitro genetic toxicity studies were negative.

Silane
Glycidoxypropyltrimethoxysilane was found to be genetically active in Ames reverse mutation assays, In Vitro sister chromatid exchange assays, and an In Vivo mouse micronucleus assay. This ingredient was not genetically active in an In Vivo cytogenetic assay (mice) or in an In Vivo sister chromatid exchange assay (rabbits, rats). The potential relevance of these data to humans is not known.

phosphine oxide
In vitro genetic toxicity studies were negative.

Dimethoxy-1-phenylacetophenone
In vitro genetic toxicity studies were negative.

Di-t-butyl-p-cresol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were predominantly negative.

Hydroxyacetophenone
In vitro genetic toxicity studies were negative.

phosphine oxide
In vitro genetic toxicity studies were negative.

Tempo A.I.
No relevant data found.

Dimethyl Cyclosiloxanes
No relevant data found.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Treated Silica

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on testing for product(s) in this family of materials:
LC50, Danio rerio (zebra fish), 96 Hour, > 1,000 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
Based on testing for product(s) in this family of materials:
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Based on testing for product(s) in this family of materials:
ErC50, Scenedesmus quadricauda (Green algae), 72 Hour, Growth rate, > 10,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria
Based on testing for product(s) in this family of materials:
EC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

Methyltrimethoxysilane

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 3.6 mg/l, OECD Test Guideline 201
No toxicity at the limit of solubility
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, >= 3.6 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, activated sludge, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 28 d, number of offspring, >= 10 mg/l

Silane

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Zebra fish (Danio/Brachydanio rerio), semi-static test, 96 Hour, > 100 mg/l, Directive 67/548/EEC, Annex V, C.1.

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, Directive 67/548/EEC, Annex V, C.2.

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate, > 536 mg/l, Directive 67/548/EEC, Annex V, C.3.
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate, 322 mg/l, Directive 67/548/EEC, Annex V, C.3.

Toxicity to bacteria
EC50, activated sludge, static test, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oryzias latipes (Japanese medaka), semi-static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna, static test, 48 Hour, 340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate, > 100 mg/l, OECD Test Guideline 201
NOEC, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate, 10 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, activated sludge, static test, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

Dimethyldimethoxysilane

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on data from similar materials
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 126 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, > 119 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Based on data from similar materials
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 118 mg/l, OECD Test Guideline 201

Toxicity to bacteria
Based on data from similar materials
EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

Silane

Acute toxicity to fish
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
LC50, Carp (Cyprinus carpio), semi-static test, 96 Hour, 55 mg/l, Directive 67/548/EEC, Annex V, C.1.

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), static test, 48 Hour, 324 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (algae), static test, 96 Hour, Growth rate, 350 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (algae), static test, 96 Hour, Growth rate, 130 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, activated sludge, Static, 3 Hour, Respiration rates., > 100 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 100 mg/l

phosphine oxide

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), semi-static test, 96 Hour, 1.89 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 2.26 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, 1.01, OECD Test Guideline 201

Dimethoxy-1-phenylacetophenone

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Lepomis macrochirus (Bluegill sunfish), 96 Hour, 6 mg/l

Acute toxicity to algae/aquatic plants
EC50, Algae, 72 Hour, 0.17 mg/l

Toxicity to bacteria
EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

Di-t-butyl-p-cresol

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), 96 Hour, > 0.57 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.48 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
EC10, Desmodesmus subspicatus (green algae), 72 Hour, 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.
EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.

Toxicity to bacteria
EC50, 3 Hour, > 10,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.07 mg/l

Hydroxyacetophenone

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), 48 Hour, 160 mg/l, DIN 38412

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna, Static, 48 Hour, > 119 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
EC50, Desmodesmus subspicatus (green algae), Static, 72 Hour, Growth rate, 1.95 mg/l, OECD Test Guideline 201
NOEC, Desmodesmus subspicatus (green algae), Static, 72 Hour, Growth rate, 0.194 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC50, 3 Hour, > 1,000 mg/l, OECD Test Guideline 209

phosphine oxide

Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Danio rerio (zebra fish), semi-static test, 96 Hour, > 0.09 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Daphnia magna, Static, 48 Hour, > 1.175 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
EC50, Algae (Desmodesmus subspicatus), Static, 72 Hour, Growth rate, > 0.260 mg/l, OECD Test Guideline 201 or Equivalent
No toxicity at the limit of solubility
NOEC, Algae (Desmodesmus subspicatus), Static, 72 Hour, Growth rate, > 0.260 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, activated sludge, Static, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates
No toxicity at the limit of solubility
NOEC, Daphnia magna, semi-static test, 21 d, number of offspring, > 0.0081 mg/l

Tempo A.I.

Acute toxicity to fish
No relevant data found.

Dimethyl Cyclosiloxanes
Acute toxicity to algae/aquatic plants
For similar material(s):
No toxicity at the limit of solubility

Persistence and degradability

Treated Silica
Biodegradability: Biodegradation is not applicable.

Methyltrimethoxysilane
Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Biodegradation: 54 %
Exposure time: 28 d
Method: Regulation (EC) No. 440/2008, Annex, C.4-A

Silane
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 69 %
Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Stability in Water (1/2-life)
Hydrolysis, DT50, 4.7 Hour, pH 7

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 7 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Dimethyldimethoxysilane

Biodegradability: For similar material(s): Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d

Stability in Water (1/2-life)
Hydrolysis, DT50, < 0.6 Hour, pH 7

Silane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 37 %
Exposure time: 28 d
Method: Regulation (EC) No. 440/2008, Annex, C.4-A

Stability in Water (1/2-life)
Hydrolysis, DT50, 6.5 Hour, pH 7, Half-life Temperature 24.5 °C, OECD Test Guideline 111
Hydrolysis, DT50, 0.15 Hour, pH 5, Half-life Temperature 24.5 °C, OECD Test Guideline 111
Hydrolysis, DT50, 0.002 Hour, pH 9, Half-life Temperature 24.5 °C, OECD Test Guideline 111

phosphine oxide

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Dimethoxy-1-phenylacetophenone

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 3 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Di-t-butyl-p-cresol

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 4.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.98 mg/mg

Chemical Oxygen Demand: 2.25 - 2.27 mg/mg

Hydroxyacetophenone

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

phosphine oxide

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 1 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Tempo A.I.

Biodegradability: No relevant data found.

Dimethyl Cyclosiloxanes

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Not applicable
Biodegradation: 56.5 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Bioaccumulative potential

Treated Silica

Bioaccumulation: No relevant data found.

Methyltrimethoxysilane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.82 Estimated.

Silane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.1 OECD Test Guideline 107

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.2

Dimethyldimethoxysilane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): Pow: 2 estimated
Bioconcentration factor (BCF): 3.16 Estimated.

Silane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.5 Estimated by Structure-Activity Relationship (SAR).

phosphine oxide

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.91 EU Method A.8 (Partition Coefficient)

Dimethoxy-1-phenylacetophenone

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 3.42
Bioconcentration factor (BCF): 43.04 60 d

Di-t-butyl-p-cresol

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.17 - 5.10 Estimated.
Bioconcentration factor (BCF): 598.4 Fish Estimated.

Hydroxyacetophenone

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.62
Bioconcentration factor (BCF): 0.63 Fish

phosphine oxide

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 5.8 OECD Test Guideline 117 or Equivalent
Bioconcentration factor (BCF): < 5 Cyprinus carpio (Carp) 28 d OECD Test Guideline 305 or Equivalent

Tempo A.I.

Bioaccumulation: No relevant data found.

Dimethyl Cyclosiloxanes

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 8.87

Mobility in soil

Treated Silica

No relevant data found.

Methyltrimethoxysilane
No relevant data found.

Silane
No relevant data found.

1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Partition coefficient (Koc): 113.8 Estimated.

Dimethyldimethoxysilane
Partition coefficient (Koc): 168.6 Estimated.

Silane
No relevant data found.

phosphine oxide
Partition coefficient (Koc): 2344 OECD Test Guideline 121

Dimethoxy-1-phenylacetophenone
No relevant data found.

Di-t-butyl-p-cresol
Partition coefficient (Koc): > 5000 Estimated.

Hydroxyacetophenone
Partition coefficient (Koc): 10.67

phosphine oxide
No relevant data found.

Tempo A.I.
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: NOTICE: Research sample for use by qualified personnel only. Upon completion of tests, dispose of material and container safely and in accord with federal, state/provincial and local laws and regulations. If further information is needed on disposal or use, consult your supplier.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Flammable liquids, n.o.s.(Methyltrimethoxysilane, Methoxysilane)
UN number	UN 1993
Class	3
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Methyltrimethoxysilane, Methoxysilane)
UN number	UN 1993
Class	3
Packing group	III
Marine pollutant	Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate, Dimethoxy-1-phenylacetophenone
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Flammable liquid, n.o.s.(Methyltrimethoxysilane, Methoxysilane)
UN number	UN 1993
Class	3
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
silicone polymer	Trade secret
Siloxane polymer	Trade secret
Siloxane	Trade secret
Siloxane	Trade secret
Treated Silica	Trade secret
Siloxane	Trade secret
Methyltrimethoxysilane	1185-55-3
1,3,5-Tri-2-propenyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	1025-15-6
Dimethyldimethoxysilane	1112-39-6
Silane	Trade secret
Silane	Trade secret
Hydroxyacetophenone	Trade secret
Dimethoxy-1-phenylacetophenone	24650-42-8
phosphine oxide	Trade secret
Di-t-butyl-p-cresol	128-37-0

California Prop. 65
WARNING: This product can expose you to chemicals including Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) not on the TSCA Inventory. It may be used for research and development purposes only, and only under the supervision of a technically qualified individual. All persons engaged in research and development with this product must be informed of the hazard information in this Material Safety Data Sheet (MSDS).

16. OTHER INFORMATION

Other information
For research use only.

Hazard Rating System
NFPA

Health	Flammability	Instability
3	2	0

HMIS

Health	Flammability	Physical Hazard
3*	2	0

* = Chronic Effects (See Hazards Identification)

Revision
Identification Number: 99159812 / A001 / Issue Date: 07/06/2022 / Version: 0.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.
Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time weighted average

Full text of other abbreviations
AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US