



# Material Safety Data Sheet

DOW CHEMICAL INTERNATIONAL PVT. LTD.

**Product name:** DOWSIL™ 7428 Adhesive

**Issue Date:** 06.07.2018

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DOW CHEMICAL INTERNATIONAL PVT. LTD. 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.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name:** DOWSIL™ 7428 Adhesive

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Adhesive, binding agents

**COMPANY IDENTIFICATION**

DOW CHEMICAL INTERNATIONAL PVT. LTD.  
UNIT NO. 801, 8th FLOOR, BUILDING NO. 9,  
GIGAPLEX,  
TTC INDUSTRIAL AREA, MIDC, AIROLI  
NAVI, MUMBAI  
400708 NAVI, MUMBAI  
INDIA

**Customer Information Number:**

(91) 22-6674-1500  
SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 91-22-6674-1800

**Local Emergency Contact:** 0091-22-6674-1800

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## 2. HAZARDS IDENTIFICATION

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**GHS Classification**

Flammable liquids - Category 2

Acute toxicity - Category 5 - Dermal

Skin corrosion/irritation - Category 2

Serious eye damage/eye irritation - Category 2A

Reproductive toxicity - Category 2

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

Acute aquatic toxicity - Category 2

Chronic aquatic toxicity - Category 3

**GHS label elements**

**Hazard pictograms**



Signal word: **DANGER!**

#### **Hazard statements**

Highly flammable liquid and vapour.

May be harmful in contact with skin.

Causes skin irritation.

Causes serious eye irritation.

Suspected of damaging fertility. Suspected of damaging the unborn child.

May cause damage to organs (Auditory system) through prolonged or repeated exposure if inhaled.

Toxic to aquatic life.

Harmful to aquatic life with long lasting effects.

#### **Precautionary statements**

##### **Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Avoid release to the environment.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

##### **Response**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER/doctor if you feel unwell.

If skin irritation occurs: Get medical advice/ attention.

If eye irritation persists: Get medical advice/ attention.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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/ container to an approved waste disposal plant.

**Other hazards**

Static-accumulating flammable liquid.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Xylene	1330-20-7	>= 10.0 - < 20.0 %
Ethylbenzene	100-41-4	>= 10.0 - < 20.0 %
Isopropanol	67-63-0	>= 1.0 - < 10.0 %
Octamethyl Cyclotetrasiloxane	556-67-2	>= 1.0 - < 2.5 %
Decamethylcyclopentasiloxane	541-02-6	>= 1.0 - < 10.0 %
Toluene	108-88-3	>= 0.1 - < 0.25 %

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**4. FIRST AID MEASURES**

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**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. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Wash off with plenty of water. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:**

Treat symptomatically and supportively.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water spray Alcohol-resistant foam Carbon dioxide (CO<sub>2</sub>) Dry chemical

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

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Carbon oxides Silicon oxides

**Unusual Fire and Explosion Hazards:** Flash back possible over considerable distance. Exposure to combustion products may be a hazard to health. Fire burns more vigorously than would be expected. Vapours may form explosive mixtures with air.

**Advice for firefighters**

**Fire Fighting Procedures:** 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. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

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

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Remove all sources of ignition. Ventilate the area. Use personal protective equipment. 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, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. See sections: 7, 8, 11, 12 and 13.

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## 7. HANDLING AND STORAGE

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**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.

Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity. 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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 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/Notation
Xylene	ACGIH	TWA	100 ppm
	ACGIH	STEL	150 ppm
Ethylbenzene	ACGIH	TWA	20 ppm
	ACGIH	TWA	200 ppm
Isopropanol	ACGIH	TWA	200 ppm
	ACGIH	STEL	400 ppm
Octamethyl Cyclotetrasiloxane	US WEEL	TWA	10 ppm
Decamethylcyclopentasiloxane	US WEEL	TWA	10 ppm
Toluene	ACGIH	TWA	20 ppm

IN OEL TWA 375 mg/m3 100 ppm  
 IN OEL STEL 560 mg/m3 150 ppm

**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Xylene	1330-20-7	Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI
Isopropanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI
Toluene	108-88-3	Toluene	In blood	Prior to last shift of workweek	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g Creatinine	ACGIH BEI

**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.

**Hygiene measures:** Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

**Individual protection measures**

**Eye/face protection:** Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.

**Skin protection**

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**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. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C)

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

<b>Physical state</b>	viscous liquid
<b>Color</b>	white translucent
<b>Odor</b>	solvent-like
<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available

<b>Melting point/range</b>	No data available
<b>Freezing point</b>	No data available
<b>Boiling point (760 mmHg)</b>	> 35 °C
<b>Flash point</b>	<b>Seta closed cup 5 °C</b>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Lower explosion limit</b>	No data available
<b>Upper explosion limit</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Relative Vapor Density (air = 1)</b>	No data available
<b>Relative Density (water = 1)</b>	0.9
<b>Water solubility</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Kinematic Viscosity</b>	130000 cSt at 25 °C
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	The substance or mixture is not classified as oxidizing.
<b>Molecular weight</b>	No data available
<b>Particle size</b>	Not applicable

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

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Not classified as a reactivity hazard.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** Can react with strong oxidizing agents. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours. Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for formaldehyde. Vapours may form explosive mixture with air. Highly flammable liquid and vapour.

**Conditions to avoid:** Heat, flames and sparks.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:** Formaldehyde.

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## 11. TOXICOLOGICAL INFORMATION

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

**Acute toxicity**

**Acute oral toxicity**

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.

**Acute dermal toxicity**

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, > 2,000 mg/kg Estimated.

**Acute inhalation toxicity**

Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. In humans, symptoms may include: Lethargy.

As product: The LC50 has not been determined.

**Skin corrosion/irritation**

Brief contact may cause moderate skin irritation with local redness.

Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

May cause drying and flaking of the skin.

**Serious eye damage/eye irritation**

May cause moderate eye irritation.

May cause slight temporary corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization**

Contains component(s) which did not cause allergic skin sensitization in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on information for component(s):

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

Lung.

Liver.

Kidney.

Blood.

May cause hearing loss based on animal data.

central nervous system (CNS) effects

Excessive exposure may cause neurologic signs and symptoms.

Xylene is reported to have caused hearing loss in laboratory animals upon exposure to high concentrations; such effects have not been reported in humans.

Although one early inhalation study on ethylbenzene reported an adverse effect on the testes, recent, more comprehensive studies have not shown this effect.

### **Carcinogenicity**

Ethylbenzene has been shown to cause cancer in laboratory animals. Xylene was not found to be carcinogenic in a National Toxicology Program bioassay in rats and mice. Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Repeated exposure in rats to D4 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. Results from a 2 year repeated vapour inhalation exposure study to rats of decamethylcyclopentasiloxane (D5) indicate effects (uterine endometrial tumors) in female animals. This finding occurred at the highest exposure dose (160 ppm) only. Studies to date have not demonstrated if this effect occurs through a pathway that is relevant to humans.

### **Teratogenicity**

Exaggerated doses of xylene given orally to pregnant mice resulted in an increase in cleft palate, a common developmental abnormality in mice. In animal inhalation studies, xylene caused toxicity to the fetus but did not cause birth defects. Available data are inadequate for evaluation of maternal toxicity. Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in lab animals at doses nontoxic to the mother.

### **Reproductive toxicity**

Based on information for component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, has been shown to interfere with fertility.

### **Mutagenicity**

Contains component(s) which were negative in animal genetic toxicity studies. Contains a component(s) which were negative in in vitro genetic toxicity studies.

### **Aspiration Hazard**

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

## **COMPONENTS INFLUENCING TOXICOLOGY:**

### **Xylene**

#### **Acute inhalation toxicity**

LC50, Rat, 4 Hour, vapour, 27.5 mg/l

### **Ethylbenzene**

#### **Acute inhalation toxicity**

LC50, Rat, 4 Hour, vapour, 17.2 mg/l

### **Isopropanol**

#### **Acute inhalation toxicity**

LC50, Rat, male and female, 6 Hour, vapour, > 10000 ppm

#### **Octamethyl Cyclotetrasiloxane**

##### **Acute inhalation toxicity**

LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403

#### **Decamethylcyclopentasiloxane**

##### **Acute inhalation toxicity**

LC50, Rat, male and female, 4 Hour, dust/mist, 8.67 mg/l

#### **Toluene**

##### **Acute inhalation toxicity**

Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Alcohol consumption and exertion may increase the adverse effects of toluene. LC50, Rat, male, 4 Hour, vapour, 25.7 mg/l

LC50, Rat, female, 4 Hour, vapour, 30 mg/l

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## **12. ECOLOGICAL INFORMATION**

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

### **Ecotoxicity**

#### **Xylene**

##### **Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 2.6 mg/l, OECD Test Guideline 203 or Equivalent

##### **Acute toxicity to aquatic invertebrates**

IC50, Daphnia magna (Water flea), 24 Hour, 1 - 4.7 mg/l, OECD Test Guideline 202 or Equivalent

##### **Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (algae), Static, 73 Hour, Growth rate, 4.36 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, Pseudokirchneriella subcapitata (green algae), 73 Hour, Growth rate, 0.44 mg/l, OECD Test Guideline 201 or Equivalent

##### **Chronic toxicity to fish**

NOEC, Oncorhynchus mykiss (rainbow trout), flow-through, 56 d, mortality, > 1.3 mg/l

#### **Ethylbenzene**

##### **Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 4.2 mg/l, OECD Test Guideline 203 or Equivalent

##### **Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), Static, 48 Hour, 1.8 - 2.4 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth inhibition (cell density reduction), 3.6 - 4.6 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

EC50, Bacteria, 16 Hour, > 12 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Ceriodaphnia dubia (water flea), semi-static test, 7 d, 0.96 mg/l

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 2 d, survival, 0.047 mg/cm<sup>2</sup>

**Isopropanol**

**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).

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 9,640 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

NOEC, alga Scenedesmus sp., static test, 7 d, Growth inhibition (cell density reduction), 1,800 mg/l

ErC50, alga Scenedesmus sp., static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

**Toxicity to bacteria**

EC50, activated sludge, > 1,000 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, 30 mg/l

**Octamethyl Cyclotetrasiloxane**

**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

No toxicity at the limit of solubility

LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l

No toxicity at the limit of solubility

LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

**Acute toxicity to aquatic invertebrates**

No toxicity at the limit of solubility

EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l

No toxicity at the limit of solubility

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

**Acute toxicity to algae/aquatic plants**

No toxicity at the limit of solubility  
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, > 0.022 mg/l

**Chronic toxicity to fish**

No toxicity at the limit of solubility  
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, >= 0.0044 mg/l

**Chronic toxicity to aquatic invertebrates**

No toxicity at the limit of solubility  
NOEC, Daphnia magna (Water flea), 21 d, >= 0.0079 mg/l

**Decamethylcyclpentasiloxane****Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.  
No toxicity at the limit of solubility  
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 16 µg/l, OECD Test Guideline 204 or Equivalent

**Acute toxicity to aquatic invertebrates**

No toxicity at the limit of solubility  
EC50, Daphnia magna, 48 Hour, > 2.9 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

No toxicity at the limit of solubility  
ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, > 0.012 mg/l  
No toxicity at the limit of solubility  
NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 0.012 mg/l

**Chronic toxicity to fish**

No toxicity at the limit of solubility  
LC50, Oncorhynchus mykiss (rainbow trout), 14 d, > 16 mg/l  
No toxicity at the limit of solubility  
NOEC, Oncorhynchus mykiss (rainbow trout), 45 d, >= 0.017 mg/l  
No toxicity at the limit of solubility  
NOEC, Oncorhynchus mykiss (rainbow trout), 90 d, >= 0.014 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna, 21 d, 0.015 mg/l

**Toxicity to soil-dwelling organisms**

This product does not have any known adverse effect on the soil organisms tested.  
NOEC, Eisenia fetida (earthworms), >= 76 mg/kg

**Toluene****Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).  
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 5.8 mg/l

**Acute toxicity to aquatic invertebrates**

LC50, water flea Ceriodaphnia dubia, semi-static test, 48 Hour, 3.78 mg/l

**Acute toxicity to algae/aquatic plants**

EbC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Biomass, 12.5 mg/l, OECD Test Guideline 201

**Chronic toxicity to fish**

NOEC, Fish, flow-through test, 40 d, growth, 1.4 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Ceriodaphnia dubia (water flea), 7 d, number of offspring, 0.74 mg/l

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 150 - 280 mg/kg

**Persistence and degradability**

**Xylene**

**Biodegradability:** Material is expected to be readily biodegradable.

10-day Window: Pass

**Biodegradation:** > 60 %

**Exposure time:** 10 d

**Method:** OECD Test Guideline 301F or Equivalent

**Ethylbenzene**

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

10-day Window: Pass

**Biodegradation:** 100 %

**Exposure time:** 6 d

**Method:** OECD Test Guideline 301E or Equivalent

**Isopropanol**

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

10-day Window: Pass

**Biodegradation:** 95 %

**Exposure time:** 21 d

**Method:** OECD Test Guideline 301E or Equivalent

10-day Window: Not applicable

**Biodegradation:** 53 %

**Exposure time:** 5 d

**Method:** Other guidelines

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	20 - 72 %

**Octamethyl Cyclotetrasiloxane**

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

10-day Window: Not applicable

**Biodegradation:** 3.7 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 310

**Stability in Water (1/2-life)**

Hydrolysis, DT50, 69.3 - 144 Hour, pH 7, Half-life Temperature 24.6 °C, OECD Test Guideline 111

**Decamethylcyclopentasiloxane**

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

10-day Window: Not applicable

**Biodegradation:** 0.14 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 310

**Toluene**

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

10-day Window: Not applicable

**Biodegradation:** 100 %

**Exposure time:** 14 d

**Method:** OECD Test Guideline 301C or Equivalent

**Bioaccumulative potential**

**Xylene**

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

**Partition coefficient: n-octanol/water(log Pow):** 3.12 Measured

**Bioconcentration factor (BCF):** 25.9 Rainbow trout (Salmo gairdneri) Measured

**Ethylbenzene**

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

**Partition coefficient: n-octanol/water(log Pow):** 3.15 Measured

**Bioconcentration factor (BCF):** 15 Fish Measured

**Isopropanol**

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

**Partition coefficient: n-octanol/water(log Pow):** 0.05 Measured

**Octamethyl Cyclotetrasiloxane**

**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**Partition coefficient: n-octanol/water(log Pow):** 6.49 Measured

**Bioconcentration factor (BCF):** 12,400 Pimephales promelas (fathead minnow) Measured

**Decamethylcyclopentasiloxane**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 5.2 Measured

**Bioconcentration factor (BCF):** 2,010 Fish Estimated.

**Toluene**

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

**Partition coefficient: n-octanol/water(log Pow):** 2.73 Measured

**Bioconcentration factor (BCF):** 13.2 - 90 Fish Measured

### Mobility in Soil

#### Xylene

Potential for mobility in soil is medium (Koc between 150 and 500).

**Partition coefficient (Koc):** 443 Estimated.

#### Ethylbenzene

Potential for mobility in soil is low (Koc between 500 and 2000).

**Partition coefficient (Koc):** 518 Estimated.

#### Isopropanol

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** 1.1 Estimated.

#### Octamethyl Cyclotetrasiloxane

Expected to be relatively immobile in soil (Koc > 5000).

#### Decamethylcyclopentasiloxane

Expected to be relatively immobile in soil (Koc > 5000).

**Partition coefficient (Koc):** > 5000 Estimated.

#### Toluene

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** 37 - 178 Estimated.

### Results of PBT and vPvB assessment

#### Xylene

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### Ethylbenzene

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### Isopropanol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### Octamethyl Cyclotetrasiloxane

Octamethylcyclotetrasiloxane (D4) meets the current REACH Annex XIII criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. 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 reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

#### Decamethylcyclopentasiloxane



Decamethylcyclopentasiloxane (D5) meets the current REACh Annex XIII criteria for vPvB. However, D5 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D5 is not biomagnifying in aquatic and terrestrial food webs. D5 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D5 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms. Based on an independent scientific panel of experts, the Canadian Minister of the Environment has concluded that "D5 is not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity, or that constitute or may constitute a danger to the environment on which life depends".

**Toluene**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Other adverse effects****Xylene**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Ethylbenzene**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Isopropanol**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Octamethyl Cyclotetrasiloxane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Decamethylcyclopentasiloxane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Toluene**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.

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**14. TRANSPORT INFORMATION**

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**Classification for ROAD and Rail transport:**

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(Ethylbenzene, Propan-2-ol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	II

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(Ethylbenzene, Propan-2-ol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	II
<b>Marine pollutant</b>	No
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Flammable liquid, n.o.s.(Ethylbenzene, Propan-2-ol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	II

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.

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## 15. REGULATORY INFORMATION

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This product has been classified in accordance with the criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), rev. 6.

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## 16. OTHER INFORMATION

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**Revision**

Identification Number: 4045536 / A146 / Issue Date: 06.07.2018 / Version: 3.0

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)
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ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
IN OEL	India. Permissible levels of certain chemical substances in work environment.
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

#### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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