

**HIGH SOLIDS ENAMEL PAINT, Gloss Safety  
Orange, 453 g**

Version 4.0	Revision Date: 10/12/2022	SDS Number: 10788935-00006	Date of last issue: 06/08/2022 Date of first issue: 10/23/2017
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**SECTION 1. IDENTIFICATION**

Product name : HIGH SOLIDS ENAMEL PAINT, Gloss Safety Orange, 453 g

Product code : 892.150014

Other means of identification : No data available

**Manufacturer or supplier's details**

Company name of supplier : Würth Canada Limited

Address : 345 Hanlon Creek Blvd  
GUELPH, ON N1C 0A1

Telephone : +1 (905) 564 6225

Telefax : +1 (905) 564 3671

Emergency telephone : Emergencies involving a spill, fire, explosion or exposure:  
CHEMTREC (24/7): 1-800-424-9300  
Transport related emergencies:  
CANUTEC (24/7): 1-613-996-6666 or \* 666 (cell)

Urgences impliquant un déversement, incendie, explosion ou exposition:  
CHEMTREC (24/7): 1-800-424-9300  
Urgences liées au transport:  
CANUTEC (24/7): 1-613-996-6666 ou \* 666 (cellulaire)

E-mail address : prodsafe@wurth.ca

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

Recommended use : Paint

Restrictions on use : Not applicable

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the Hazardous Products Regulations**

Flammable aerosols : Category 1

Gases under pressure : Dissolved gas

Eye irritation : Category 2A

Specific target organ toxicity : Category 3  
- single exposure

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**GHS label elements**

Hazard pictograms

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Signal Word

: Danger

Hazard Statements

: H222 Extremely flammable aerosol.  
H280 Contains gas under pressure; may explode if heated.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

Precautionary Statements

**Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P261 Avoid breathing spray.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear eye protection and face protection.

**Response:**  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical attention.

**Storage:**  
P405 Store locked up.  
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C (122 °F).

**Disposal:**  
P501 Dispose of contents and container to an approved waste disposal plant.

**Other hazards**

Repeated exposure may cause skin dryness or cracking.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture

: Mixture

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### Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Acetone	2-Propanone	67-64-1	18.7
Propane	Dimethylmethane	74-98-6	15.74
Butane	Butyl hydride	106-97-8	9.24
Barium sulfate	Sulfuric acid, barium salt	7727-43-7	8.94
Isobutyl acetate	Acetic acid, 2-methylpropyl ester	110-19-0	7.01
2-(Propyloxy)ethanol	Ethanol, 2-propoxy-	2807-30-9	6.7
2-Methoxy-1-methylethyl acetate	2-Propanol, 1-methoxy-, 2-acetate	108-65-6	3.52
n-Butyl acetate	Acetic acid, butyl ester	123-86-4	3.4
Pentan-2-one	Methyl propyl ketone	107-87-9	1.39
Titanium dioxide	Titanic anhydride	13463-67-7	0.85
Isobutyl methyl ketone	4-Methylpentan-2-one	108-10-1	0.74
Zirconium octoate	Hexanoic acid, 2-ethyl-, zirconium salt	22464-99-9	0.18

### SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Get medical attention if symptoms occur.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.
- Most important symptoms : Causes serious eye irritation.

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and effects, both acute and delayed		May cause drowsiness or dizziness. Prolonged or repeated contact may dry skin and cause irritation.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
Notes to physician	:	Treat symptomatically and supportively.

**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
Hazardous combustion products	:	Carbon oxides Metal oxides Sulfur oxides Nitrogen oxides (NO <sub>x</sub> ) Chlorine compounds
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or

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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/vapors/mists with a water spray jet.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
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.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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**SECTION 7. HANDLING AND STORAGE**

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.  
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing spray.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Take precautionary measures against static discharges.  
Take care to prevent spills, waste and minimize release to the environment.  
Do not spray on an open flame or other ignition source.

Conditions for safe storage : Store locked up.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.  
Do not pierce or burn, even after use.  
Keep cool. Protect from sunlight.

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Materials to avoid : Do not store with the following product types:  
Self-reactive substances and mixtures  
Organic peroxides  
Oxidizing agents  
Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures which in contact with water emit flammable gases  
Explosives  
Gases

Recommended storage temperature : < 40 °C

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Acetone	67-64-1	TWA	500 ppm 1,200 mg/m <sup>3</sup>	CA AB OEL
		STEL	750 ppm 1,800 mg/m <sup>3</sup>	CA AB OEL
		TWA	250 ppm	CA BC OEL
		STEL	500 ppm	CA BC OEL
		TWAEV	500 ppm 1,190 mg/m <sup>3</sup>	CA QC OEL
		STEV	1,000 ppm 2,380 mg/m <sup>3</sup>	CA QC OEL
		TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
Propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m <sup>3</sup>	CA QC OEL
Butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWAEV	800 ppm 1,900 mg/m <sup>3</sup>	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
Barium sulfate	7727-43-7	TWA	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Inhalable)	5 mg/m <sup>3</sup>	CA BC OEL
		TWAEV (inhalable dust)	5 mg/m <sup>3</sup>	CA QC OEL
		TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
Isobutyl acetate	110-19-0	TWA	150 ppm	CA AB OEL

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			713 mg/m <sup>3</sup>	
		TWAEV	50 ppm	CA QC OEL
		STEV	150 ppm	CA QC OEL
		TWA	50 ppm	CA BC OEL
		STEL	150 ppm	CA BC OEL
		TWA	50 ppm	ACGIH
		STEL	150 ppm	ACGIH
2-(Propyloxy)ethanol	2807-30-9	TWA	25 ppm 110 mg/m <sup>3</sup>	CA ON OEL
2-Methoxy-1-methylethyl acetate	108-65-6	TWA	50 ppm	CA BC OEL
		STEL	75 ppm	CA BC OEL
		TWA	50 ppm 270 mg/m <sup>3</sup>	CA ON OEL
n-Butyl acetate	123-86-4	STEL	200 ppm 950 mg/m <sup>3</sup>	CA AB OEL
		TWA	150 ppm 713 mg/m <sup>3</sup>	CA AB OEL
		TWAEV	50 ppm	CA QC OEL
		STEV	150 ppm	CA QC OEL
		TWA	50 ppm	CA BC OEL
		STEL	150 ppm	CA BC OEL
		TWA	50 ppm	ACGIH
		STEL	150 ppm	ACGIH
Pentan-2-one	107-87-9	TWA	200 ppm 705 mg/m <sup>3</sup>	CA AB OEL
		STEL	250 ppm 881 mg/m <sup>3</sup>	CA AB OEL
		TWA	150 ppm	CA BC OEL
		STEL	250 ppm	CA BC OEL
		TWAEV	150 ppm 530 mg/m <sup>3</sup>	CA QC OEL
		STEL	150 ppm	ACGIH
Titanium dioxide	13463-67-7	TWA	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Total dust)	10 mg/m <sup>3</sup>	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m <sup>3</sup>	CA BC OEL
		TWAEV (total dust)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable particulate matter)	2.5 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH
		TWA (Respirable particulate matter)	0.2 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH
Isobutyl methyl ketone	108-10-1	TWA	50 ppm 205 mg/m <sup>3</sup>	CA AB OEL
		STEL	75 ppm 307 mg/m <sup>3</sup>	CA AB OEL
		TWA	20 ppm	CA BC OEL

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		STEL	75 ppm	CA BC OEL
		TWAEV	20 ppm	CA QC OEL
		STEV	75 ppm	CA QC OEL
		TWA	20 ppm	ACGIH
		STEL	75 ppm	ACGIH
Zirconium octoate	22464-99-9	TWA	5 mg/m <sup>3</sup> (Zirconium)	CA AB OEL
		STEL	10 mg/m <sup>3</sup> (Zirconium)	CA AB OEL
		TWAEV	5 mg/m <sup>3</sup> (Zirconium)	CA QC OEL
		STEV	10 mg/m <sup>3</sup> (Zirconium)	CA QC OEL
		TWA	5 mg/m <sup>3</sup> (Zirconium)	CA BC OEL
		STEL	10 mg/m <sup>3</sup> (Zirconium)	CA BC OEL
		TWA	5 mg/m <sup>3</sup> (Zirconium)	ACGIH
		STEL	10 mg/m <sup>3</sup> (Zirconium)	ACGIH

## Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Acetone	67-64-1	Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI
Isobutyl methyl ketone	108-10-1	methyl isobutyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	1 mg/l	ACGIH BEI

## Engineering measures

- : Minimize workplace exposure concentrations.
- If sufficient ventilation is unavailable, use with local exhaust ventilation.
- If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.
- Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise



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Regulated of 15 mg/m<sup>3</sup> - total dust, 5 mg/m<sup>3</sup> - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m<sup>3</sup> - respirable particles, 10 mg/m<sup>3</sup> - inhalable particles.

**Personal protective equipment**

- Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
- Filter type : Self-contained breathing apparatus
- Hand protection  
Material : Nitrile rubber
- Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!
- Eye protection : Wear the following personal protective equipment:  
Safety goggles
- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : aerosol
- Propellant : Propane, Butane
- Color : orange

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Odor	:	aromatic
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	-44 °C
Flash point	:	-19 °C
		Flash point is only valid for liquid portion in the aerosol can.
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit / Upper flammability limit	:	10.9 %(V)
Lower explosion limit / Lower flammability limit	:	1.7 %(V)
Vapor pressure	:	2,750 hPa
Relative vapor density	:	Not applicable
Relative density	:	0.77 - 0.85
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	Not applicable

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Extremely flammable aerosol. Vapors may form explosive mixture with air. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

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**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

**Components:****Acetone:**

Acute oral toxicity	:	LD50 (Rat): 5,800 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 76 mg/l Exposure time: 4 h Test atmosphere: vapor

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Acute dermal toxicity : LD50 (Rabbit): 7,426 mg/kg

**Propane:**

Acute inhalation toxicity : LC50 (Rat): > 800000 ppm  
Exposure time: 15 min  
Test atmosphere: gas

**Butane:**

Acute inhalation toxicity : LC50 (Rat): 658 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

**Barium sulfate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

**Isobutyl acetate:**

Acute oral toxicity : LD50 (Rat): 13,413 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21.1 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

LC50 (Rat): 21.2 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 17,400 mg/kg

**2-(Propyloxy)ethanol:**

Acute oral toxicity : LD50 (Mouse): 3,089 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 1,337 mg/kg

**2-Methoxy-1-methylethyl acetate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC0 (Rat): 9.48 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg

**n-Butyl acetate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21.1 mg/l

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Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**Pentan-2-one:**

Acute oral toxicity : LD50 (Rat): 1,600 - 3,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 25.5 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 436

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Based on data from similar materials

**Titanium dioxide:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

**Isobutyl methyl ketone:**

Acute oral toxicity : LD50 (Rat): 2,080 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Expert judgment

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**Zirconium octoate:**

Acute oral toxicity : LD50 (Rat): 2,043 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402

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Assessment: The substance or mixture has no acute dermal toxicity

Remarks: Based on data from similar materials

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Acetone:**

Assessment : Repeated exposure may cause skin dryness or cracking.

**Barium sulfate:**

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 439

Remarks : Based on data from similar materials

Result : No skin irritation

**Isobutyl acetate:**

Species : Rabbit

Result : No skin irritation

Remarks : Based on data from similar materials

Assessment : Repeated exposure may cause skin dryness or cracking.

Remarks : Based on national or regional regulation.

**2-(Propyloxy)ethanol:**

Species : Rabbit

Result : No skin irritation

**2-Methoxy-1-methylethyl acetate:**

Species : Rabbit

Result : No skin irritation

**n-Butyl acetate:**

Species : Rabbit

Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

**Pentan-2-one:**

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Remarks : Based on data from similar materials

**Titanium dioxide:**

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Species	:	Rabbit
Result	:	No skin irritation

**Isobutyl methyl ketone:**

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Assessment	:	Repeated exposure may cause skin dryness or cracking.
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**Zirconium octoate:**

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:****Acetone:**

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days
Method	:	OECD Test Guideline 405

**Barium sulfate:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

**Isobutyl acetate:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

**2-(Propyloxy)ethanol:**

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days

**2-Methoxy-1-methylethyl acetate:**

Species	:	Rabbit
Result	:	No eye irritation

**n-Butyl acetate:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

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**Pentan-2-one:**

Species	: Rabbit
Result	: Irritation to eyes, reversing within 7 days

**Titanium dioxide:**

Species	: Rabbit
Result	: No eye irritation

**Isobutyl methyl ketone:**

Species	: Human
Result	: Irritation to eyes, reversing within 21 days

**Zirconium octoate:**

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Acetone:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: negative

**Barium sulfate:**

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative
Remarks	: Based on data from similar materials

**Isobutyl acetate:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative



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**2-(Propyloxy)ethanol:**

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

**2-Methoxy-1-methylethyl acetate:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

**n-Butyl acetate:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: negative

**Pentan-2-one:**

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative
Remarks	: Based on data from similar materials

**Titanium dioxide:**

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact
Species	: Mouse
Result	: negative

**Isobutyl methyl ketone:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

**Zirconium octoate:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: negative
Remarks	: Based on data from similar materials

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**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Acetone:**

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Result: negative
		Test Type: Bacterial reverse mutation assay (AMES) Result: negative
		Test Type: Chromosome aberration test in vitro Result: negative

Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Result: negative
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**Propane:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 474 Result: negative

**Butane:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (gas) Method: OECD Test Guideline 474 Result: negative Remarks: Based on data from similar materials

**Barium sulfate:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on data from similar materials
		Test Type: Chromosome aberration test in vitro Result: negative Remarks: Based on data from similar materials

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Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Based on data from similar materials

**Isobutyl acetate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**2-(Propyloxy)ethanol:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

**2-Methoxy-1-methylethyl acetate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: DNA damage and repair, unscheduled DNA syn-  
thesis in mammalian cells (in vitro)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

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**n-Butyl acetate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

**Pentan-2-one:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: Directive 67/548/EEC, Annex V, B.13/14.  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative  
Remarks: Based on data from similar materials

**Titanium dioxide:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse  
Result: negative

**Isobutyl methyl ketone:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: equivocal

Test Type: Chromosome aberration test in vitro  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

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**Zirconium octoate:**

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Product:**

Carcinogenicity - Assessment	:	No data available
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**Components:****Acetone:**

Species	:	Mouse
Application Route	:	Skin contact
Exposure time	:	424 days
Result	:	negative

**Barium sulfate:**

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	2 Years
Result	:	negative
Remarks	:	Based on data from similar materials

**2-Methoxy-1-methylethyl acetate:**

Species	:	Rat
Application Route	:	inhalation (vapor)
Exposure time	:	2 Years
Result	:	negative
Remarks	:	Based on data from similar materials

**Titanium dioxide:**

Species	:	Rat
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 Years
Method	:	OECD Test Guideline 453
Result	:	positive
Remarks	:	The mechanism or mode of action may not be relevant in hu-

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Carcinogenicity - Assessment : Limited evidence of carcinogenicity in inhalation studies with animals.

**Isobutyl methyl ketone:**

Species	: Rat
Application Route	: inhalation (vapor)
Exposure time	: 2 Years
Method	: OECD Test Guideline 451
Result	: positive

Species	: Mouse
Application Route	: inhalation (vapor)
Exposure time	: 2 Years
Method	: OECD Test Guideline 451
Result	: positive

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

**Reproductive toxicity**

Not classified based on available information.

**Product:**

Reproductive toxicity - Assessment : No data available

**Components:****Acetone:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**Propane:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test

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Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

**Butane:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

**Barium sulfate:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative  
Remarks: Based on data from similar materials

**Isobutyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OPPTS 870.3800  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation  
Result: negative  
Remarks: Based on data from similar materials

**2-(Propyloxy)ethanol:**

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rabbit  
Application Route: inhalation (vapor)

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Result: negative

**2-Methoxy-1-methylethyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**n-Butyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 416  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**Pentan-2-one:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 421  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 414  
Result: negative

**Isobutyl methyl ketone:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative



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**II****Zirconium octoate:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: positive  
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

**STOT-single exposure**

May cause drowsiness or dizziness.

**Components:****Acetone:**

Assessment : May cause drowsiness or dizziness.

**Propane:**

Assessment : May cause drowsiness or dizziness.

**Butane:**

Assessment : May cause drowsiness or dizziness.

**Isobutyl acetate:**

Assessment : May cause drowsiness or dizziness.  
Remarks : Based on data from similar materials

**2-Methoxy-1-methylethyl acetate:**

Assessment : May cause drowsiness or dizziness.

**n-Butyl acetate:**

Assessment : May cause drowsiness or dizziness.

**Isobutyl methyl ketone:**

Assessment : May cause drowsiness or dizziness.

**STOT-repeated exposure**

Not classified based on available information.

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**Components:****Barium sulfate:**

Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

**Repeated dose toxicity****Components:****Acetone:**

Species : Rat  
NOAEL : 900 mg/kg  
LOAEL : 1,700 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days

Species : Rat  
NOAEL : 45 mg/l  
Application Route : inhalation (vapor)  
Exposure time : 8 Weeks

**Propane:**

Species : Rat  
NOAEL : 7.214 mg/l  
Application Route : inhalation (gas)  
Exposure time : 6 Weeks  
Method : OECD Test Guideline 422

**Butane:**

Species : Rat  
NOAEL : 9000 ppm  
Application Route : inhalation (gas)  
Exposure time : 6 Weeks  
Method : OECD Test Guideline 422

**Barium sulfate:**

Species : Rat  
NOAEL : 61.1 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days  
Remarks : Based on data from similar materials

**Isobutyl acetate:**

Species : Rat  
NOAEL : > 100 mg/kg  
Application Route : Ingestion  
Exposure time : 92 Days  
Remarks : Based on data from similar materials

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Species	: Rat
NOAEL	: > 2.4 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 13 Weeks
Remarks	: Based on data from similar materials

**2-(Propyloxy)ethanol:**

Species	: Rat
LOAEL	: 195 mg/kg
Application Route	: Ingestion
Exposure time	: 6 Weeks

**2-Methoxy-1-methylethyl acetate:**

Species	: Rat
NOAEL	: > 1,000 mg/kg
Application Route	: Ingestion
Exposure time	: 41 - 45 Days
Method	: OECD Test Guideline 422

Species	: Mouse
NOAEL	: 1.62 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 2 y
Remarks	: Based on data from similar materials

Species	: Rabbit
NOAEL	: > 1,838 mg/kg
Application Route	: Skin contact
Exposure time	: 90 Days
Remarks	: Based on data from similar materials

**n-Butyl acetate:**

Species	: Rat
NOAEL	: 2.4 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 90 Days

**Pentan-2-one:**

Species	: Rat
NOAEL	: 5.28 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 13 Weeks
Method	: OECD Test Guideline 413

**Titanium dioxide:**

Species	: Rat
NOAEL	: 24,000 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days

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Species	:	Rat
NOAEL	:	10 mg/m <sup>3</sup>
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 y

**Isobutyl methyl ketone:**

Species	:	Rat
NOAEL	:	250 mg/kg
LOAEL	:	1,000 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks

Species	:	Rat
NOAEL	:	4.106 mg/l
Application Route	:	inhalation (vapor)
Exposure time	:	14 Weeks

**Zirconium octoate:**

Species	:	Rat
NOAEL	:	300 mg/kg
Application Route	:	Ingestion
Exposure time	:	91 - 93 Days
Remarks	:	Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

**Components:****Acetone:**

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

**Pentan-2-one:**

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

**Isobutyl methyl ketone:**

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Acetone:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 5,540 mg/l
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Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 8,800 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 7,000 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)):  $\geq 79$  mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: 61,150 mg/l  
Exposure time: 30 min  
Method: ISO 8192

## Barium sulfate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)):  $> 100$  mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)):  $> 10 - 100$  mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)):  $> 1$  mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

ErC50 (Pseudokirchneriella subcapitata (green algae)):  $> 100$  mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)):  $> 1$  mg/l  
Exposure time: 33 d  
Method: OECD Test Guideline 210  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)):  $> 1$  mg/l  
Exposure time: 21 d  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50:  $> 600$  mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

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NOEC: > 600 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

**Isobutyl acetate:**

- Toxicity to fish : LC50 (*Oryzias latipes* (Japanese medaka)): 16.6 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 24.6 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EL50 (*Pseudokirchneriella subcapitata* (green algae)): 397 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201
- NOELR (*Pseudokirchneriella subcapitata* (green algae)): 196 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 23.2 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211
- Toxicity to microorganisms : EC10 (*Pseudomonas putida*): 487 mg/l  
Exposure time: 6 h

**2-(Propyloxy)ethanol:**

- Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): > 5,000 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 5,000 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : NOEC (*Pseudokirchneriella subcapitata* (green algae)): >= 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to microorganisms : IC50: > 1,000 mg/l  
Exposure time: 16 h

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**2-Methoxy-1-methylethyl acetate:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 - 180 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 500 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (algae)): > 1,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 100 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211
- Toxicity to microorganisms : EC10: > 1,000 mg/l  
Exposure time: 0.5 h

**n-Butyl acetate:**

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 18 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp. (Water flea)): 44 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 397 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- NOEC (Pseudokirchneriella subcapitata (green algae)): 196 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 23.2 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials
- Toxicity to microorganisms : IC50 (Tetrahymena pyriformis): 356 mg/l  
Exposure time: 40 h

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**Pentan-2-one:**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 1,240 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 110 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 150 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
		NOEC (Pseudokirchneriella subcapitata (green algae)): 73.77 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

**Titanium dioxide:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): > 10,000 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

**Isobutyl methyl ketone:**

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 179 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 200 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 30 mg/l Exposure time: 21 d

**Zirconium octoate:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 180 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0.17 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: No toxicity at the limit of solubility.
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 49.3 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials
- EC10 (Desmodesmus subspicatus (green algae)): 32 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 25 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials
- Toxicity to microorganisms : EC50 (Pseudomonas putida): 112.1 mg/l  
Exposure time: 17 h  
Method: DIN 38 412 Part 8  
Remarks: Based on data from similar materials

**Persistence and degradability****Components:****Acetone:**

- Biodegradability : Result: Readily biodegradable.  
Biodegradation: 91 %  
Exposure time: 28 d

**Propane:**

- Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 385.5 h  
Remarks: Based on data from similar materials

**Butane:**

- Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 385.5 h  
Remarks: Based on data from similar materials

**Isobutyl acetate:**

- Biodegradability : Result: Readily biodegradable.  
Biodegradation: 81 %  
Exposure time: 20 d

**2-(Propyloxy)ethanol:**

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Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 20 d

**2-Methoxy-1-methylethyl acetate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 90 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**n-Butyl acetate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 83 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

**Pentan-2-one:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 70 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

**Isobutyl methyl ketone:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 83 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**Zirconium octoate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 99 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301E  
Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****Acetone:**

Partition coefficient: n-octanol/water : log Pow: -0.27 - -0.23

**Butane:**

Partition coefficient: n-octanol/water : log Pow: 2.31

**Barium sulfate:**

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Bioaccumulation : Species: *Lepomis macrochirus* (Bluegill sunfish)  
Bioconcentration factor (BCF): < 500

Partition coefficient: n-octanol/water : log Pow: -1.03  
Remarks: Calculation

**Isobutyl acetate:**

Partition coefficient: n-octanol/water : log Pow: 2.3

**2-(Propyloxy)ethanol:**

Partition coefficient: n-octanol/water : log Pow: 0.673

**2-Methoxy-1-methylethyl acetate:**

Partition coefficient: n-octanol/water : log Pow: 1.2

**n-Butyl acetate:**

Partition coefficient: n-octanol/water : log Pow: 2.3

**Pentan-2-one:**

Partition coefficient: n-octanol/water : log Pow: 0.857

**Isobutyl methyl ketone:**

Partition coefficient: n-octanol/water : log Pow: 1.9

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Empty containers retain residue and can be dangerous.  
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.  
If not otherwise specified: Dispose of as unused product.

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Please ensure aerosol cans are sprayed completely empty  
(including propellant)

**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1

**IATA-DGR**

UN/ID No.	: UN 1950
Proper shipping name	: Aerosols, flammable
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: Flammable Gas
Packing instruction (cargo aircraft)	: 203
Packing instruction (passenger aircraft)	: 203

**IMDG-Code**

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1
EmS Code	: F-D, S-U
Marine pollutant	: no

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****TDG**

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1
ERG Code	: 126
Marine pollutant	: no

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION**

**Volatile organic compounds (VOC) content** CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 - Guidelines for VOC in Consumer Products  
VOC content: 48 % / 506.3 g/l

**The ingredients of this product are reported in the following inventories:**

DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

**SECTION 16. OTHER INFORMATION****Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWA EV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; 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; 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;

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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; TECl - 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; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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Date format : mm/dd/yyyy

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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