

# TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol

Safety Data Sheet AKT888

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

### 1.1. Product identifier

Product form	: Mixture
Physical state	: Liquid
Product name	: TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol
Product code	: AKT888
Formula	: C17H26O9Ti
Synonyms	: TRIS(2-METHYL-2-PROPENOATO)METHOXYETHOXYETHOXYTITANATE; TRIS(METHACRYLATO-O)(PROPAN-2-OLATO)TITANIUM
Chemical family	: METAL ESTER

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

#### 1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

#### GELEST, INC.

11 East Steel Road  
Morrisville, PA 19067

#### USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

#### GELEST INC.

Fritz-Klatte-Strasse 8  
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#### Germany

T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM

[info@gelestde.com](mailto:info@gelestde.com) - [www.gelestde.com](http://www.gelestde.com)

### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Reproductive toxicity, Category 1B	H360
Full text of H statements : see section 16	

#### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

GHS08

Signal word (CLP) :

: Danger

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Hazardous ingredients	: 2-Methoxyethanol
Hazard statements (CLP)	: H226 - Flammable liquid and vapour. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H360 - May damage fertility or the unborn child.
Precautionary statements (CLP)	: P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240 - Ground/bond container and receiving equipment. P264 - Wash hands thoroughly after handling. P308+P313 - IF exposed or concerned: Get medical advice/attention.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Titanium trimethacrylate methoxyethoxyethoxide	(CAS-No.) 61436-48-4 (EC-No.) 262-788-4	70 - 75	Skin Irrit. 2, H315 Eye Irrit. 2, H319
2-Methoxyethanol substance listed as REACH Candidate	(CAS-No.) 109-86-4 (EC-No.) 203-713-7 (EC Index-No.) 603-011-00-4	20 - 29	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Repr. 1B, H360FD
Isopropanol	(CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index-No.) 603-117-00-0	1 - 5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a physician.
First-aid measures after skin contact	: Wash with plenty of water/.... Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Get medical advice/attention.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	: May damage fertility or the unborn child.
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.
Chronic symptoms	: Methoxyethanol, a hydrolysis product, is known to have a chronic effect on the central nervous system.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.

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Unsuitable extinguishing media : Do not use straight streams.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

### 5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Eliminate ignition sources. Use special care to avoid static electric charges.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapour and mist. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Provide good ventilation in process area to prevent formation of vapour. Use only non-sparking tools.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions : Keep container tightly closed. Keep in a cool place. Store locked up. Protect against sunlight. Avoid excessive heat. Store cold.

Incompatible materials : Free radical initiators. Moist air. Oxidizing agent. Water.

Storage area : Store in a well-ventilated place. Store away from heat.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

2-Methoxyethanol (109-86-4)		
EU	IOELV TWA (ppm)	1 ppm
Austria	MAK (ppm)	1 ppm
Austria	MAK Short time value (ppm)	4 ppm
Belgium	Limit value (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup>

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2-Methoxyethanol (109-86-4)		
Belgium	Limit value (ppm)	0.1 ppm
Bulgaria	OEL TWA (ppm)	1 ppm
Cyprus	OEL TWA (ppm)	1 ppm
France	VME (mg/m <sup>3</sup> )	3.2 mg/m <sup>3</sup> (restrictive limit)
France	VME (ppm)	1 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	3.2 mg/m <sup>3</sup> (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	1 ppm (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	TRGS 903 Biological limit value	15 mg/g (Medium: urine - Time: end of shift - Parameter: Methoxyacetic acid (measured as mg/g Creatinine)
Gibraltar	Eight hours ppm	1 ppm
Greece	OEL TWA (ppm)	1 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.1 ppm
Italy	OEL TWA (ppm)	0.5 ppm
Latvia	OEL TWA (ppm)	1 ppm
USA IDLH	US IDLH (ppm)	200 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	0.1 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	80 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	25 ppm
Spain	VLA-ED (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (indicative limit value)
Spain	VLA-ED (ppm)	1 ppm (indicative limit value)
Switzerland	KZGW (mg/m <sup>3</sup> )	25.6 mg/m <sup>3</sup>
Switzerland	KZGW (ppm)	8 ppm
Switzerland	MAK (mg/m <sup>3</sup> )	3.2 mg/m <sup>3</sup>
Switzerland	MAK (ppm)	1 ppm
Netherlands	Grenswaarde TGG 8H (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	1 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	9 mg/m <sup>3</sup> (calculated)
United Kingdom	WEL STEL (ppm)	3 ppm (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	1 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	1.6 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	0.5 ppm
Hungary	AK-érték	3.16 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	1 ppm
Ireland	OEL (15 min ref) (ppm)	3 ppm (calculated)
Lithuania	IPRV (ppm)	1 ppm
Lithuania	TPRV (mg/m <sup>3</sup> )	30 mg/m <sup>3</sup>
Lithuania	TPRV (ppm)	10 ppm
Malta	OEL TWA (ppm)	1 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	3.1 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	1 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m <sup>3</sup> )	3.1 mg/m <sup>3</sup>
Norway	Grenseverdier (Korttidsverdi) (ppm)	1 ppm
Poland	NDS (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	3.2 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	1 ppm

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<b>2-Methoxyethanol (109-86-4)</b>		
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	16 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	5 ppm
Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	128 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	16 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	5 ppm
Australia	TWA (mg/m <sup>3</sup> )	16 mg/m <sup>3</sup>
Australia	TWA (ppm)	5 ppm
Portugal	OEL TWA (ppm)	1 ppm (indicative limit value)
Portugal	OEL chemical category (PT)	skin - potential for cutaneous exposure indicative limit value
<b>Isopropanol (67-63-0)</b>		
Austria	MAK (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup> (short time value for large casting)
Austria	MAK (ppm)	200 ppm (short time value for large casting)
Austria	MAK Short time value (mg/m <sup>3</sup> )	2000 mg/m <sup>3</sup> 2000 mg/m <sup>3</sup> (STEL for large casting valid till 12/31/2013)
Austria	MAK Short time value (ppm)	800 ppm 800 ppm (STEL for large casting valid till 12/31/2013)
Belgium	Limit value (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Belgium	Limit value (ppm)	200 ppm
Belgium	Short time value (mg/m <sup>3</sup> )	1000 mg/m <sup>3</sup>
Belgium	Short time value (ppm)	400 ppm
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	980 mg/m <sup>3</sup>
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	1225 mg/m <sup>3</sup>
France	VLE (mg/m <sup>3</sup> )	980 mg/m <sup>3</sup>
France	VLE (ppm)	400 ppm
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup> (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	200 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 903 Biological limit value	25 mg/l (Medium: whole blood - Time: end of shift - Parameter: Acetone) 25 mg/l (Medium: urine - Time: end of shift - Parameter: Acetone)
Greece	OEL TWA (mg/m <sup>3</sup> )	980 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	400 ppm
Greece	OEL STEL (mg/m <sup>3</sup> )	1225 mg/m <sup>3</sup>
Greece	OEL STEL (ppm)	500 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200 ppm
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	400 ppm
Latvia	OEL TWA (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
USA IDLH	US IDLH (ppm)	2000 ppm (10% LEL)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	980 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	400 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	1225 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (ppm)	500 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	980 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	400 ppm
Spain	VLA-ED (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup> (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary or biocide compound)
Spain	VLA-ED (ppm)	200 ppm (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary or biocide compound)
Spain	VLA-EC (mg/m <sup>3</sup> )	1000 mg/m <sup>3</sup>
Spain	VLA-EC (ppm)	400 ppm

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Isopropanol (67-63-0)		
Switzerland	KZGW (mg/m <sup>3</sup> )	1000 mg/m <sup>3</sup>
Switzerland	KZGW (ppm)	400 ppm
Switzerland	MAK (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Switzerland	MAK (ppm)	200 ppm
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	999 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	400 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	1250 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	500 ppm
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	490 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	200 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	200 ppm
Finland	HTP-arvo (15 min)	620 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	250 ppm
Hungary	AK-érték	500 mg/m <sup>3</sup>
Hungary	CK-érték	2000 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	200 ppm
Ireland	OEL (15 min ref) (ppm)	400 ppm
Lithuania	IPRV (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Lithuania	IPRV (ppm)	150 ppm
Lithuania	TPRV (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
Lithuania	TPRV (ppm)	250 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	245 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	100 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m <sup>3</sup> )	245 mg/m <sup>3</sup>
Norway	Grenseverdier (Korttidsverdi) (ppm)	100 ppm
Poland	NDS (mg/m <sup>3</sup> )	900 mg/m <sup>3</sup>
Poland	NDSch (mg/m <sup>3</sup> )	1200 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	200 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	81 ppm
Romania	OEL STEL (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Romania	OEL STEL (ppm)	203 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	200 ppm
Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	1000 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	150 ppm
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	250 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	1230 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	500 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	985 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	400 ppm
Australia	TWA (mg/m <sup>3</sup> )	983 mg/m <sup>3</sup>
Australia	TWA (ppm)	400 ppm
Australia	STEL (mg/m <sup>3</sup> )	1230 mg/m <sup>3</sup>
Australia	STEL (ppm)	500 ppm
Portugal	OEL TWA (ppm)	200 ppm
Portugal	OEL STEL (ppm)	400 ppm

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### Isopropanol (67-63-0)

Portugal

OEL chemical category (PT)

A4 - Not Classifiable as a Human Carcinogen

### 8.2. Exposure controls

#### Appropriate engineering controls:

Provide local exhaust or general room ventilation.

#### Personal protective equipment:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid all unnecessary exposure.

#### Hand protection:

Neoprene or nitrile rubber gloves

#### Eye protection:

Chemical goggles. Contact lenses should not be worn

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 422.28 g/mol
Colour	: Yellow-orange to amber.
Odour	: Characteristic odor of methacrylates.
Odour threshold	: No data available
Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 76 °C initial
Flash point	: 60 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapour.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.11
% Volatiles	: > 30 %
Solubility	: Reacts with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerization may occur if heated. Material decomposes slowly in contact with moist air and rapidly in contact with water liberating methacrylic acid.

#### 10.4. Conditions to avoid

Heat. Sparks. Open flame.

#### 10.5. Incompatible materials

Free radical initiators. Moist air. Oxidizing agent. Water.

#### 10.6. Hazardous decomposition products

Methacrylic acid. Organic acid vapors. Titanium oxides.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified. Not classified. Not classified.

#### 2-Methoxyethanol (109-86-4)

LD50 oral rat	2370 mg/kg 2460 mg/kg
LD50 dermal rabbit	1280 mg/kg
LC50 inhalation rat (ppm)	1478 ppm (Exposure time: 7 h)
ATE CLP (oral)	500 mg/kg bodyweight
ATE CLP (dermal)	1280 mg/kg bodyweight
ATE CLP (vapours)	11 mg/l/4h

#### Isopropanol (67-63-0)

LD50 oral rat	1870 mg/kg
LD50 dermal rabbit	4059 mg/kg
LC50 inhalation rat (mg/l)	72600 mg/m <sup>3</sup> (Exposure time: 4 h)
ATE CLP (oral)	4396 mg/kg bodyweight
ATE CLP (dermal)	12800 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes serious eye irritation.  
Respiratory or skin sensitisation : Not classified  
Germ cell mutagenicity : Not classified  
Methoxyethanol is listed as a potential mutagen.  
Carcinogenicity : Not classified

#### Isopropanol (67-63-0)

IARC group	3 - Not classifiable
Reproductive toxicity	: May damage fertility or the unborn child.
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Methoxyethanol can cause headaches, dizziness, drowsiness, irritation of eyes, tremor, ataxia, gastrointestinal disturbance, or weight loss.
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.
Chronic symptoms	: Methoxyethanol, a hydrolysis product, is known to have a chronic effect on the central nervous system.
Reason for classification	: Expert judgment



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### SECTION 12: Ecological information

#### 12.1. Toxicity

Acute aquatic toxicity : Not classified  
Chronic aquatic toxicity : Not classified

#### 2-Methoxyethanol (109-86-4)

LC50 fish 1	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2	9650 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

#### Isopropanol (67-63-0)

LC50 fish 1	9640 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	13299 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11130 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

#### 2-Methoxyethanol (109-86-4)

Log Pow	-0.85
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#### Isopropanol (67-63-0)

Log Pow	0.05 (at 25 °C)
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#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

#### Component

2-Methoxyethanol (109-86-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.  
Product/Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.  
Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

#### 14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

UN-No. (ADR)	: 1993
UN-No. (IMDG)	: 1993
UN-No. (IATA)	: 1993
UN-No. (ADN)	: 1993
UN-No. (RID)	: 1993

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IMDG)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IATA)	: Flammable liquid, n.o.s.
Proper Shipping Name (ADN)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (RID)	: FLAMMABLE LIQUID, N.O.S.
Transport document description (ADR)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol), 3, III, (D/E)
Transport document description (IMDG)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol), 3, III

# TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol

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Transport document description (IATA)	: UN 1993 Flammable liquid, n.o.s. (TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol), 3, III
Transport document description (ADN)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol), 3, III
Transport document description (RID)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol), 3, III

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR)	: 3
Danger labels (ADR)	: 3



#### IMDG

Transport hazard class(es) (IMDG)	: 3
Danger labels (IMDG)	: 3



#### IATA

Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3



#### ADN

Transport hazard class(es) (ADN)	: 3
Danger labels (ADN)	: 3



#### RID

Transport hazard class(es) (RID)	: 3
Danger labels (RID)	: 3



### 14.4. Packing group

Packing group (ADR)	: III
Packing group (IMDG)	: III

# TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol

## Safety Data Sheet

Packing group (IATA) : III  
Packing group (ADN) : III  
Packing group (RID) : III

### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR) : F1  
Special provisions (ADR) : 274, 601, 640E  
Limited quantities (ADR) : 5I  
Excepted quantities (ADR) : E1  
Packing instructions (ADR) : P001, IBC03, LP01, R001  
Mixed packing provisions (ADR) : MP19  
Portable tank and bulk container instructions (ADR) : T4  
Portable tank and bulk container special provisions (ADR) : TP1, TP29  
Tank code (ADR) : LGBF  
Vehicle for tank carriage : FL  
Transport category (ADR) : 3  
Special provisions for carriage - Packages (ADR) : V12  
Special provisions for carriage - Operation (ADR) : S2  
Hazard identification number (Kemler No.) : 30  
Orange plates : 

30
1993

  
Tunnel restriction code (ADR) : D/E

#### - Transport by sea

Special provisions (IMDG) : 223, 274, 955  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : P001, LP01  
IBC packing instructions (IMDG) : IBC03  
Tank instructions (IMDG) : T4  
Tank special provisions (IMDG) : TP1, TP29  
EmS-No. (Fire) : F-E  
EmS-No. (Spillage) : S-E  
Stowage category (IMDG) : A

#### - Air transport

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y344  
PCA limited quantity max net quantity (IATA) : 10L  
PCA packing instructions (IATA) : 355  
PCA max net quantity (IATA) : 60L  
CAO packing instructions (IATA) : 366  
CAO max net quantity (IATA) : 220L  
Special provisions (IATA) : A3  
ERG code (IATA) : 3L

# TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol

## Safety Data Sheet

### - Inland waterway transport

Classification code (ADN)	: F1
Special provisions (ADN)	: 274, 601, 640E
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

### - Rail transport

Classification code (RID)	: F1
Special provisions (RID)	: 274, 601, 640E
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4
Portable tank and bulk container special provisions (RID)	: TP1, TP29
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 30

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains a substance on the REACH candidate list in concentration  $\geq 0.1\%$  or with a lower specific limit: 2-Methoxyethanol (EC 203-713-7, CAS 109-86-4)

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

Contains no REACH Annex XIV substances

% Volatiles : > 30 %

#### 15.1.2. National regulations

##### Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen	: 2-Methoxyethanol is listed
SZW-lijst van mutagene stoffen	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: 2-Methoxyethanol is listed

# TITANIUM TRIMETHACRYLATE METHOXYETHOXYETHOXIDE, 70% in methoxydiethyleneglycol/isopropanol

## Safety Data Sheet

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : 2-Methoxyethanol is listed

### Denmark

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 1B	Reproductive toxicity, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.
H360FD	May damage fertility. May damage the unborn child.

SDS EU (REACH Annex II) - Custom

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