

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

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

1.1 Product identifier

Product identifier : GRIP
Product name : GRIP #4 1K UNIVERSAL ADHESION PROMOTER AEROSOL
Product type : Aerosol.
Appearance : Aerosol.
Other means of identification : GRIP/AL
Date of issue/ Date of revision : 13 May 2025
Version : 1
Date of previous issue : No previous validation

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

Identified uses : Coating component.
Uses advised against : Not for sale to or use by consumers.

1.3 Details of the supplier of the safety data sheet

U-POL Limited
Denington Road
Wellingborough, Northamptonshire, NN8 2QH
+44 (0) 1933 230310
technicalsupport@u-pol.com
e-mail address of person responsible for this SDS : sds-competence@axalta.com

National contact

U-POL Netherlands
B.V. Hoorgoordreef 15
Amsterdam, Netherlands 1101BA
+31 20 240 2216
technicalsupport@u-pol.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : 010-456 6700 (9:00-17:00);112

Supplier

+(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Aerosol 1, H222, H229

Skin Irrit. 2, H315

Eye Irrit. 2, H319

Repr. 2, H361d

STOT SE 3, H336

STOT RE 2, H373

Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Contains : toluene

Hazard statements : H222, H229 - Extremely flammable aerosol. Pressurized container: may burst if heated.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.

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.
P260 - Do not breathe dust or mist.
P251 - Do not pierce or burn, even after use.

Response : P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage : P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Disposal : Not applicable.

Supplemental label elements : EUH208 - Contains hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis (ditridecyl phosphito -O")titanate(2-). May produce an allergic reaction.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

SECTION 2: Hazards identification

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
toluene	REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	≥25 - ≤50	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	-	[1] [2]
dimethyl ether	REACH #: 01-2119472128-37 EC: 204-065-8 CAS: 115-10-6 Index: 603-019-00-8	≥25 - ≤50	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	-	[1] [2]
acetone	REACH #: 01-2119471330-49 EC: 200-662-2 CAS: 67-64-1	≥10 - <20	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 Aquatic Chronic 2, H411 EUH066	-	[1] [2]
Reaction mass of ethylbenzene and xylene	REACH #: 01-2119539452-40 EC: 905-588-0	≤3	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1]
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)	EC: 264-709-9 CAS: 64157-14-8	≤0.2	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	-	[1]

SECTION 3: Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

[1] Substance classified with a physical, health or environmental hazard

[2] Substance with a workplace exposure limit

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-----------------------------------|--|
| General | : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice. |
| Eye contact | : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice. |
| Inhalation | : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. |
| Skin contact | : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. |
| Ingestion | : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting. |
| Protection of first-aiders | : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-). May produce an allergic reaction.

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|----------------------------|---|
| Notes to physician | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : No specific treatment. |

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Recommended: alcohol-resistant foam, CO₂, powders, water spray.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous combustion products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and materials for containment and cleaning up : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Preferably clean with a detergent. Avoid using solvents.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

SECTION 7: Handling and storage

7.1 Precautions for safe handling

: Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type. Keep away from heat, sparks and flame. No sparking tools should be used. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or watercourses.

Information on fire and explosion protection

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Notes on joint storage

Keep away from: oxidizing agents, strong alkalis, strong acids.

Additional information on storage conditions

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorized access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P3a	150 tonnes	500 tonnes

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Identifiers	Exposure limit values
toluene	REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	Work environment authority Regulation 2018:1 (Sweden, 11/2022) Absorbed through skin , Ototoxicant. TWA 8 hours: 50 ppm. TWA 8 hours: 192 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m ³ . EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 192 mg/m ³ . TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m ³ . STEL 15 minutes: 100 ppm.
dimethyl ether	REACH #: 01-2119472128-37 EC: 204-065-8 CAS: 115-10-6 Index: 603-019-00-8	Work environment authority Regulation 2018:1 (Sweden, 11/2022) TWA 8 hours: 500 ppm. TWA 8 hours: 950 mg/m ³ . STEL 15 minutes: 800 ppm. STEL 15 minutes: 1500 mg/m ³ . EU OEL (Europe, 1/2022) TWA 8 hours: 1000 ppm. TWA 8 hours: 1920 mg/m ³ .
acetone	REACH #: 01-2119471330-49 EC: 200-662-2 CAS: 67-64-1	Work environment authority Regulation 2018:1 (Sweden, 11/2022) TWA 8 hours: 250 ppm. TWA 8 hours: 600 mg/m ³ . STEL 15 minutes: 500 ppm. STEL 15 minutes: 1200 mg/m ³ . EU OEL (Europe, 1/2022) TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m ³ .

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name

toluene

Result

DNEL - Workers - Long term - Inhalation

50.3 ppm

Effects: Systemic

DNEL - General population - Long term - Oral

8.13 mg/kg bw/day

Effects: Systemic

SECTION 8: Exposure controls/personal protection

	DNEL - General population - Long term - Inhalation 56.5 mg/m³ <u>Effects:</u> Local DNEL - General population - Long term - Inhalation 56.5 mg/m³ <u>Effects:</u> Systemic DNEL - Workers - Long term - Inhalation 192 mg/m³ <u>Effects:</u> Local DNEL - Workers - Long term - Inhalation 192 mg/m³ <u>Effects:</u> Systemic DNEL - General population - Long term - Dermal 226 mg/kg bw/day <u>Effects:</u> Systemic DNEL - General population - Short term - Inhalation 226 mg/m³ <u>Effects:</u> Local DNEL - General population - Short term - Inhalation 226 mg/m³ <u>Effects:</u> Systemic DNEL - Workers - Long term - Dermal 384 mg/kg bw/day <u>Effects:</u> Systemic DNEL - Workers - Short term - Inhalation 384 mg/m³ <u>Effects:</u> Local DNEL - Workers - Short term - Inhalation 384 mg/m³ <u>Effects:</u> Systemic
dimethyl ether	DNEL - General population - Long term - Inhalation 471 mg/m³ <u>Effects:</u> Systemic DNEL - Workers - Long term - Inhalation 1894 mg/m³ <u>Effects:</u> Systemic
acetone	DNEL - Workers - Long term - Inhalation 500 ppm <u>Effects:</u> Systemic DNEL - Workers - Long term - Dermal 186 mg/kg bw/day <u>Effects:</u> Systemic DNEL - Workers - Long term - Inhalation

SECTION 8: Exposure controls/personal protection

	1210 mg/m³ Effects: Systemic
	DNEL - Workers - Short term - Inhalation 2420 mg/m³ Effects: Local
Reaction mass of ethylbenzene and xylene	DNEL - Workers - Long term - Dermal 212 mg/kg bw/day Effects: Systemic
	DNEL - Workers - Long term - Inhalation 221 mg/m³ Effects: Systemic
PNECs	
Product/ingredient name	Result
toluene	Fresh water 0.68 mg/l
	Fresh water sediment 16.39 mg/l
	Marine water sediment 16.39 mg/kg
	Sewage Treatment Plant 13.61 mg/l
	Soil 2.89 mg/kg
	Marine water 0.68 mg/l
acetone	Fresh water 10.6 mg/l
	Marine water sediment 1.06 mg/l
	Sediment 30.4 mg/kg
	Marine water sediment 3.04 mg/kg
	Soil 29.5 mg/kg
	Sewage Treatment Plant 100 mg/l
Reaction mass of ethylbenzene and xylene	Fresh water 0.327 mg/l
	Marine water

SECTION 8: Exposure controls/personal protection

0.327 mg/l

Sewage Treatment Plant

6.58 mg/l

Fresh water sediment

12.46 mg/kg dwt

Marine water sediment

12.46 mg/kg dwt

Soil

2.31 mg/kg

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Use safety eyewear designed to protect against splash of liquids.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves : Duration / breakthrough time: <1 hour,
Glove material: NBR, nitrile rubber, material thickness as splash protection: at least 0.2 mm, (EN374)
Glove material: NBR, nitrile rubber, material thickness for short-term contact: at least 0.5 mm, (EN374)

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

Expert judgment

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection : Personnel should wear antistatic clothing made of natural fibers or of high-temperature-resistant synthetic fibers.

SECTION 8: Exposure controls/personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Environmental exposure controls : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear.

Odor : Not available.

Odor threshold : Not available.

Melting point/freezing point : Technically not possible to measure

Boiling point or initial boiling point and boiling range : Not applicable.

Flammability : Not available.

Lower and upper explosion limit : Lower: 1.1%
Upper: 26.2%

Lower and upper explosive (flammable) limits : Not available.

Flash point : Closed cup: -41°C

Auto-ignition temperature : 350°C

Decomposition temperature : Not applicable.

pH : Not applicable.

Justification : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): Not available.

Vapor pressure 209.1 kPa (1568.7 mm Hg)

Density : 0.772 g/cm³

Weight volatiles : 98.5 % (w/w)

VOC content : 98.5 % (w/w) (2010/75/EU)

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Heat of combustion : 35.02 kJ/g

Aerosol product

SECTION 9: Physical and chemical properties

Type of aerosol : Spray

Further information Not available.

9.2.2 Other safety characteristics

Miscible with water : Yes.

Further information Not available.

room temperature (=20°C)

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.

10.5 Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-). May produce an allergic reaction.

Acute toxicity

Product/ingredient name	Result
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SECTION 11: Toxicological information

toluene

Rat - Dermal - TDLo

26.4 mg/kg

Toxic effects: Skin After systemic exposure - Dermatitis, irritative Metabolism (intermediary) - Effect on inflammation or mediation of inflammation

Rat - Oral - LD50

5001 mg/kg

Rat - Dermal - LD50

5001 mg/kg

Rat - Inhalation - LC50 Vapor49 g/m³ [4 hours]

dimethyl ether

Rat - Oral - LD50

>99999 mg/kg

Rat - Dermal - LD50

>99999 mg/kg

Rat - Inhalation - LC50 Vapor309 g/m³ [4 hours]**Rat - Inhalation - LC50 Gas.**

164000 ppm [4 hours]

Toxic effects: Behavioral - Ataxia Behavioral - Coma

acetone

Rat - Oral - LD50

5800 mg/kg

Toxic effects: Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Tremor

Rabbit - Dermal - LD50

2001 mg/kg

Rat - Inhalation - LC50 Vapor

21 mg/l [4 hours]

Reaction mass of ethylbenzene and xylene

Rat - Oral - LD50

3523 to 4000 mg/kg

Rabbit - Dermal - LD50

121236 mg/kg

Rat - Inhalation - LC50 Vapor

6350 to 6700 ppm [4 hours]

hydrogen tetrakis[2,2-bis[(allyloxy)methyl]
butan-1-olato-O1]bis(ditridecyl phosphito -O")
titanate(2-)

Rat - Male, Female - Oral - LD50

4600 mg/kg

OECD [Acute Oral Toxicity]

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

SECTION 11: Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
mixture	N/A	43188.1	N/A	431.9	N/A
toluene	5001	5001	N/A	49	N/A
dimethyl ether	N/A	N/A	164000	309	N/A
acetone	5800	2001	N/A	21	N/A
Reaction mass of ethylbenzene and xylene	N/A	1100	N/A	11	N/A
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)	4600	N/A	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name

toluene

Result

Pig - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 250 uL

Rabbit - Skin - Mild irritant

Amount/concentration applied: 435 mg

acetone

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Rabbit - Skin - Mild irritant

Amount/concentration applied: 395 mg

hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)

Rabbit - Skin - Erythema/Eschar

Duration of treatment/exposure: 4 hours

Observation period: 3 days

Irritation score: 2.7

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

toluene

Result

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 0.1 MI

acetone

Human - Eyes - Mild irritant

Amount/concentration applied: 186300 ppm

Rabbit - Eyes - Mild irritant

Amount/concentration applied: 10 uL

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 20 mg

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 20 mg

SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name

hydrogen tetrakis[2,2-bis[(allyloxy)methyl]
butan-1-olato-O1]bis(ditridecyl phosphito -O")
titanate(2-)

Result

Mouse - skin

Result: Sensitizing

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name

toluene
acetone
Reaction mass of ethylbenzene and xylene

Result

STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Product/ingredient name

toluene
Reaction mass of ethylbenzene and xylene

Result

STOT RE 2, H373
STOT RE 2, H373

Aspiration hazard

SECTION 11: Toxicological information

Product/ingredient name	Result
toluene	ASPIRATION HAZARD - Category 1
Reaction mass of ethylbenzene and xylene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact	: Causes skin irritation.
Ingestion	: Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

General : May cause damage to organs through prolonged or repeated exposure.

SECTION 11: Toxicological information

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging the unborn child.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

There are no data available on the mixture itself.

Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

Product/ingredient name

toluene

Result

Acute - LC50 - Fresh water

Fish - Coho salmon, silver salmon - *Oncorhynchus kisutch* - Fry

Weight: 1 g

5500 µg/l [96 hours]

Effect: Mortality

Acute - EC50 - Fresh water

Daphnia - Water flea - *Daphnia magna* - Juvenile (Fledgling, Hatchling, Weanling)

6000 µg/l [48 hours]

Effect: Intoxication

Chronic - NOEC - Fresh water

Daphnia - Water flea - *Daphnia magna*

Age: ≤24 hours

1 mg/l [21 days]

Effect: Mortality

Acute - EC50 - Fresh water

Algae - Green algae - *Raphidocelis subcapitata*

12.5 mg/l [72 hours]

Effect: Growth

acetone

Acute - LC50 - Fresh water

Daphnia - Water flea - *Daphnia magna*

10 mg/l [48 hours]

Effect: Mortality

Chronic - NOEC - Marine water

Algae - Green algae - *Ulva pertusa*

4.95 mg/l [96 hours]

Effect: Reproduction

SECTION 12: Ecological information

	Acute - EC50 - Marine water Algae - Green algae - <i>Ulva pertusa</i> 20.565 mg/l [96 hours] <u>Effect</u>: Reproduction Chronic - NOEC - Fresh water Crustaceans - Daphnia - <i>Daphniidae</i> 0.016 ml/l [21 days] <u>Effect</u>: Population Acute - LC50 - Fresh water Fish - Guppy - <i>Poecilia reticulata</i> <u>Age</u>: 4 to 12 months; <u>Size</u>: 2 to 10 cm; <u>Weight</u>: 0.5 to 14 g 5600 ppm [96 hours] <u>Effect</u>: Mortality Chronic - NOEC - Marine water Fish - Mummichog - <i>Fundulus heteroclitus</i> <u>Size</u>: 7.24 cm; <u>Weight</u>: 6.71 g 0.1 mg/l [4 weeks] <u>Effect</u>: Population
Reaction mass of ethylbenzene and xylene	Acute - LC50 OECD 203 Fish - Trout - <i>Oncorhynchus mykiss</i> 2.6 mg/l [96 hours] Acute - LC50 OECD 202 Daphnia - Daphnia - <i>Daphnia magna</i> 1 mg/l [24 hours] Acute - EC50 OECD 201 Algae - Algae - <i>Selenastrum capricornutum</i> 2.2 mg/l [73 hours] Chronic - NOEC OECD 301F Micro-organism - Activated sludge - <i>Activated sludge</i> 16 mg/l [28 days]
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O") titanate(2-)	Acute - EC50 - Fresh water OECD [Daphnia sp. Acute Immobilization Test and Reproduction Test] Daphnia 3.6 mg/l [48 hours] Acute - EC50 OECD [Alga, Growth Inhibition Test] Algae >100 mg/l [72 hours]

Conclusion/Summary [Product] : Not available.

SECTION 12: Ecological information

12.2 Persistence and degradability

Product/ingredient name

acetone

Result

OECD [Ready Biodegradability - CO₂ Evolution Test]
90.9% [28 days] - Readily

hydrogen tetrakis[2,2-bis[(allyloxy)methyl]
butan-1-olato-O1]bis(ditridecyl phosphito -O")
titanate(2-)

OECD [Ready Biodegradability - CO₂ Evolution Test]
40.3% [28 days] - Not readily

Conclusion/Summary [Product] : Not available.

Ingredient name

toluene

Conclusion/Summary

ECHA: toluene is readily biodegraded by both non-adapted and adapted sewage sludge inocula. Three of these studies were also used as part of a weight of evidence that toluene is readily biodegradable in the EU RAR for toluene (2003).

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
toluene	-	-	Readily
acetone	-	-	Readily
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
toluene	2.73	90	Low
dimethyl ether	0.07	-	Low
acetone	-0.23	-	Low
Reaction mass of ethylbenzene and xylene	3.16	-	Low

12.4 Mobility in soil

Soil/Water partition coefficient

Product/ingredient name	logK _{oc}	K _{oc}
toluene	2.07	117.115
dimethyl ether	0.44	2.76229
acetone	0.56	3.6548

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
toluene	No	No	Yes	Yes	No	No	No
dimethyl ether	No	No	Yes	No	No	No	Yes
acetone	No	No	Yes	No	No	No	Yes
Reaction mass of ethylbenzene and xylene	No	No	No	No	No	No	No
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl	No	No	No	No	No	No	No

SECTION 12: Ecological information

phosphito -O")titanate(2-)

Mobility : Not available.

Conclusion/Summary : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
toluene	No	No	No	Yes	No	No	No
dimethyl ether	No	No	No	No	No	No	No
acetone	No	No	No	No	No	No	No
Reaction mass of ethylbenzene and xylene	No	No	No	No	No	No	No
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)	No	No	No	No	No	No	No

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
toluene	No	No	No	Yes	No	No	No
dimethyl ether	No	No	No	No	No	No	No
acetone	No	No	No	No	No	No	No
Reaction mass of ethylbenzene and xylene	No	No	No	No	No	No	No
hydrogen tetrakis[2,2-bis[(allyloxy)methyl]butan-1-olato-O1]bis(ditridecyl phosphito -O")titanate(2-)	No	No	No	No	No	No	No

Conclusion/Summary : The product does not meet the criteria to be considered as a PBT or vPvB.

Regulation (EC) No. 1272/2008 [CLP]

12.6 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.
- Disposal considerations** : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

Packaging

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Disposal considerations** : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Type of packaging	European waste catalogue (EWC)	
CEPE Guidelines	15 01 10*	packaging containing residues of or contaminated by hazardous substances

- Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1950	UN1950	UN1950	UN1950
14.2 UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	Aerosols, flammable
14.3 Transport hazard class(es)	2 	2 	2.1 	2.1 
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	Yes.	No.	No.

Additional information

ADR/RID : **Tunnel code (D)**

SECTION 14: Transport information

ADN : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.

Marine pollutant : Not available.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not applicable.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Explosive precursors : This product is regulated by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

Seveso Directive

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

National regulations

Industrial use : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

Flammable liquid class (SRVFS 2005:10) : 1

SECTION 15: Regulatory information

15.2 Chemical Safety Assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

CEPE code : 1

Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- B = Bioaccumulative
- BCF = Bioconcentration Factor
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- IATA = International Air Transport Association
- IMDG = International Maritime Dangerous Goods
- IMO = International Maritime Organization
- M = Mobile
- N/A = Not available
- P = Persistent
- PBT = Persistent, Bioaccumulative and Toxic
- PMT = Persistent, Mobile and Toxic
- PNEC = Predicted No Effect Concentration
- RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
- RRN = REACH Registration Number
- SGG = Segregation Group
- T = Toxic
- vB = Very Bioaccumulative
- vM = Very Mobile
- vP = Very Persistent
- vPvB = Very Persistent and Very Bioaccumulative
- vPvM = Very Persistent and Very Mobile

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aerosol 1, H222, H229	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Repr. 2, H361d	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

SECTION 16: Other information

H220 H222, H229	Extremely flammable gas. Extremely flammable aerosol. Pressurized container: may burst if heated.
H225 H226	Highly flammable liquid and vapor. Flammable liquid and vapor.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Full text of classifications [CLP/GHS]

Acute Tox. 4 Aerosol 1 Aquatic Chronic 2 Aquatic Chronic 3 Asp. Tox. 1 Eye Irrit. 2 Flam. Gas 1A Flam. Liq. 2 Flam. Liq. 3 Press. Gas (Comp.) Repr. 2 Skin Irrit. 2 Skin Sens. 1 STOT RE 2 STOT SE 3	ACUTE TOXICITY - Category 4 AEROSOLS - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 3 ASPIRATION HAZARD - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE GASES - Category 1A FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 GASES UNDER PRESSURE - Compressed gas TOXIC TO REPRODUCTION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3
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Date of issue/ Date of revision : 13 May 2025

Version : 1

Date of previous issue : No previous validation

Notice to reader

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SECTION 16: Other information

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