

SAFETY DATA SHEET



ALPOLAN DUOSCAN 5483-02 - All variants

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

1.1 Product identifier

Product name : ALPOLAN DUOSCAN 5483-02 - All variants

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

Product use : Paint.

1.3 Details of the supplier of the safety data sheet

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

e-mail address of person responsible for this SDS : Prod-safe@teknos.com

National contact

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : In an emergency, call 112

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]

Flam. Liq. 2, H225

Eye Irrit. 2, H319

Skin Sens. 1, H317

Carc. 2, H351

STOT SE 3, H336

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

Hazard statements :

- H225 - Highly flammable liquid and vapour.
- H317 - May cause an allergic skin reaction.
- H319 - Causes serious eye irritation.
- H336 - May cause drowsiness or dizziness.
- H351 - Suspected of causing cancer.
- H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

SECTION 2: Hazards identification

Prevention	: P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response	: P308 + P313 - IF exposed or concerned: Get medical advice or attention.
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: Contains: n-Butyl acetate; Ethyl acetate; Methylisobutylketone and EO bis (benztriazolyl)phenylpropionat
Supplemental label elements	:
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:

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
n-Butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥25 - ≤50	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	[1] [2]
Ethyl acetate	REACH #: 01-2119475103-46 EC: 205-500-4 CAS: 141-78-6 Index: 607-022-00-5	≥10 - ≤25	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066	-	[1] [2]
Naphtha (petroleum), hydrotreated light	EC: 265-151-9 CAS: 64742-49-0 Index: 649-328-00-1	≥10 - <25	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1]
Methylisobutylketone	REACH #: 01-2119473980-30 EC: 203-550-1 CAS: 108-10-1 Index: 606-004-00-4	≥10 - ≤25	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H336 EUH066	ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
Toluene	REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3	<3	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336	-	[1] [2]

Date of issue/Date of revision : 20/12/2023 **Date of previous issue** : No previous validation **Version** : 1 2/34

ALPOLAN DUOSCAN 5483-02 - All variants

Label No : 75569

SECTION 3: Composition/information on ingredients

Xylene	Index: 601-021-00-3 REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≤3	STOT RE 2, H373 Asp. Tox. 1, H304 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 (oral, inhalation) Asp. Tox. 1, H304	ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
EO bis(benztriazolyl) phenylpropionat	REACH #: 01-0000015075-76 EC: 400-830-7 CAS: 104810-48-2 Index: 607-176-00-3	<1	Skin Sens. 1A, H317 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	-	[1]

There are no additional 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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

SECTION 4: First aid measures

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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised 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** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

- 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).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonne	50000 tonne

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

Product/ingredient name	Exposure limit values
n-Butyl acetate	Regulation on Limit Values - MAC (Austria, 4/2021). [Butyl acetate (all isomers except tert-butyl acetate)] CEIL: 480 mg/m ³ 15 minutes. CEIL: 100 ppm 15 minutes. TWA: 241 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
Ethyl acetate	Regulation on Limit Values - MAC (Austria, 4/2021). TWA: 200 ppm 8 hours. TWA: 734 mg/m ³ 8 hours. PEAK: 1468 mg/m ³ , 4 times per shift, 15 minutes. PEAK: 400 ppm, 4 times per shift, 15 minutes.
Methylisobutylketone	Regulation on Limit Values - MAC (Austria, 4/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 83 mg/m ³ 8 hours. PEAK: 50 ppm, 4 times per shift, 15 minutes. PEAK: 208 mg/m ³ , 4 times per shift, 15 minutes.
Toluene	Regulation on Limit Values - MAC (Austria, 4/2021). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 190 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. PEAK: 380 mg/m ³ , 4 times per shift, 15 minutes.
Xylene	Regulation on Limit Values - MAC (Austria, 4/2021). [Xylenes (all isomers)] PEAK: 442 mg/m ³ , 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 221 mg/m ³ 8 hours.

SECTION 8: Exposure controls/personal protection

n-Butyl acetate	<p>Limit values (Belgium, 5/2021). [butyl acetate, all isomers] STEL: 712 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 238 mg/m³ 8 hours. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Limit values (Belgium, 5/2021). TWA: 200 ppm 8 hours. TWA: 734 mg/m³ 8 hours. STEL: 1468 mg/m³ 15 minutes. STEL: 400 ppm 15 minutes.</p>
Methylisobutylketone	<p>Limit values (Belgium, 5/2021). TWA: 20 ppm 8 hours. TWA: 83 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 208 mg/m³ 15 minutes.</p>
Toluene	<p>Limit values (Belgium, 5/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 77 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 384 mg/m³ 15 minutes.</p>
Xylene	<p>Limit values (Belgium, 5/2021). [Xylene] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 221 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Limit value 8 hours: 241 mg/m³ 8 hours. Limit value 15 min: 723 mg/m³ 15 minutes. Limit value 15 min: 150 ppm 15 minutes. Limit value 8 hours: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Limit value 8 hours: 734 mg/m³ 8 hours. Limit value 15 min: 400 ppm 15 minutes. Limit value 15 min: 1468 mg/m³ 15 minutes. Limit value 8 hours: 200 ppm 8 hours.</p>
Methylisobutylketone	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Limit value 8 hours: 50 mg/m³ 8 hours. Limit value 15 min: 200 mg/m³ 15 minutes.</p>
Toluene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Absorbed through skin. Limit value 15 min: 384 mg/m³ 15 minutes. Limit value 8 hours: 192 mg/m³ 8 hours. Limit value 15 min: 100 ppm 15 minutes. Limit value 8 hours: 50 ppm 8 hours.</p>
Xylene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). [Xylene (mixture of isomers), pure] Absorbed through skin. Limit value 8 hours: 221 mg/m³ 8 hours. Limit value 15 min: 442 mg/m³ 15 minutes. Limit value 15 min: 100 ppm 15 minutes. Limit value 8 hours: 50 ppm 8 hours.</p>
n-Butyl acetate	<p>Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). STELV: 723 mg/m³ 15 minutes. STELV: 150 ppm 15 minutes. ELV: 241 mg/m³ 8 hours. ELV: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021).</p>

SECTION 8: Exposure controls/personal protection

Methylisobutylketone	<p>STELV: 400 ppm 15 minutes. ELV: 200 ppm 8 hours. STELV: 1468 mg/m³ 15 minutes. ELV: 734 mg/m³ 8 hours.</p> <p>Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). STELV: 208 mg/m³ 15 minutes. STELV: 50 ppm 15 minutes. ELV: 83 mg/m³ 8 hours. ELV: 20 ppm 8 hours.</p>
Toluene	<p>Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). Absorbed through skin. STELV: 384 mg/m³ 15 minutes. STELV: 100 ppm 15 minutes. ELV: 192 mg/m³ 8 hours. ELV: 50 ppm 8 hours.</p>
Xylene	<p>Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). [xylene (all isomers)] Absorbed through skin. STELV: 442 mg/m³ 15 minutes. STELV: 100 ppm 15 minutes. ELV: 221 mg/m³ 8 hours. ELV: 50 ppm 8 hours.</p>
No exposure limit value known.	
No exposure limit value known.	
No exposure limit value known.	
n-Butyl acetate	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 241 mg/m³ 8 hours.</p>
Ethyl acetate	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). TWA: 500 mg/m³ 8 hours. TWA: 150 ppm 8 hours. STEL: 1100 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes.</p>
Methylisobutylketone	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours. STEL: 208 mg/m³ 15 minutes. STEL: 50 ppm 15 minutes.</p>
Toluene	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). Absorbed through skin. TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 384 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes.</p>
Xylene	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). [Xylenes] Absorbed through skin. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. STEL: 450 mg/m³ 15 minutes. TWA: 200 mg/m³ 8 hours.</p>
n-Butyl acetate	<p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>EU OEL (Europe, 1/2022). Notes: list of indicative</p>

SECTION 8: Exposure controls/personal protection

Methylisobutylketone	<p>occupational exposure limit values STEL: 400 ppm 15 minutes. STEL: 1468 mg/m³ 15 minutes. TWA: 200 ppm 8 hours. TWA: 734 mg/m³ 8 hours.</p> <p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 83 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 208 mg/m³ 15 minutes.</p>
Toluene	<p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 384 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes.</p>
Xylene	<p>EU OEL (Europe, 1/2022). [xylene, mixed isomers pure] Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 50 ppm 8 hours. TWA: 221 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 150 ppm 8 hours. TWA: 720 mg/m³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 960 mg/m³ 15 minutes.</p>
Ethyl acetate	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 200 ppm 8 hours. TWA: 730 mg/m³ 8 hours. STEL: 400 ppm 15 minutes. STEL: 1470 mg/m³ 15 minutes.</p>
Methylisobutylketone	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 20 ppm 8 hours. TWA: 80 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 210 mg/m³ 15 minutes.</p>
Toluene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). Absorbed through skin. Ototoxicant. TWA: 25 ppm 8 hours. TWA: 81 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 380 mg/m³ 15 minutes.</p>
Xylene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Xylenes] Absorbed through skin. STEL: 440 mg/m³ 15 minutes. TWA: 220 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes.</p>
No exposure limit value known.	
No exposure limit value known.	
n-Butyl acetate	<p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 50 ppm 8 hours. TWA: 241 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes.</p>
Ethyl acetate	<p>Presidential Decree 307/1986: Occupational exposure limit</p>

SECTION 8: Exposure controls/personal protection

Methylisobutylketone	<p>values (Greece, 9/2021). TWA: 200 ppm 8 hours. TWA: 734 mg/m³ 8 hours. STEL: 1468 mg/m³ 15 minutes. STEL: 400 ppm 15 minutes.</p> <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 410 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 410 mg/m³ 15 minutes.</p>
Toluene	<p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 192 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 384 mg/m³ 15 minutes.</p>
Xylene	<p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Xylenes (all isomers)] Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 650 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Skin sensitiser. Inhalation sensitiser. TWA: 241 mg/m³ 8 hours. PEAK: 723 mg/m³ 15 minutes. PEAK: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Skin sensitiser. Inhalation sensitiser. TWA: 734 mg/m³ 8 hours. PEAK: 1468 mg/m³ 15 minutes. PEAK: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.</p>
Methylisobutylketone	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). TWA: 83 mg/m³ 8 hours. PEAK: 208 mg/m³ 15 minutes. PEAK: 50 ppm 15 minutes. TWA: 20 ppm 8 hours.</p>
Toluene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. Skin sensitiser. Inhalation sensitiser. TWA: 192 mg/m³ 8 hours. PEAK: 384 mg/m³ 15 minutes. PEAK: 100 ppm 15 minutes. TWA: 50 ppm 8 hours.</p>
Xylene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). [xylene, mixture of isomers] Absorbed through skin. TWA: 221 mg/m³ 8 hours. PEAK: 442 mg/m³ 15 minutes. PEAK: 100 ppm 15 minutes. TWA: 50 ppm 8 hours.</p>
n-Butyl acetate	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [butyl acetate, all isomers] TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 723 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes.</p>
Ethyl acetate	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). TWA: 540 mg/m³ 8 hours. TWA: 150 ppm 8 hours.</p>
Methylisobutylketone	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). Absorbed through skin.</p>

SECTION 8: Exposure controls/personal protection

Toluene	<p>STEL: 208 mg/m³ 15 minutes. STEL: 50 ppm 15 minutes. TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours.</p> <p>Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). Absorbed through skin. STEL: 188 mg/m³ 15 minutes. STEL: 50 ppm 15 minutes. TWA: 94 mg/m³ 8 hours. TWA: 25 ppm 8 hours.</p>
Xylene	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [xylene, all isomers] Absorbed through skin. STEL: 442 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 109 mg/m³ 8 hours. TWA: 25 ppm 8 hours.</p>
n-Butyl acetate	<p>NAOSH (Ireland, 5/2021). Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 50 ppm 8 hours. OELV-8hr: 241 mg/m³ 8 hours. OELV-15min: 150 ppm 15 minutes. OELV-15min: 723 mg/m³ 15 minutes.</p>
Ethyl acetate	<p>NAOSH (Ireland, 5/2021). Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 200 ppm 8 hours. OELV-15min: 400 ppm 15 minutes. OELV-15min: 1468 mg/m³ 15 minutes. OELV-8hr: 734 mg/m³ 8 hours.</p>
Methylisobutylketone	<p>NAOSH (Ireland, 5/2021). Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 20 ppm 8 hours. OELV-8hr: 83 mg/m³ 8 hours. OELV-15min: 50 ppm 15 minutes. OELV-15min: 208 mg/m³ 15 minutes.</p>
Toluene	<p>NAOSH (Ireland, 5/2021). Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 50 ppm 8 hours. OELV-8hr: 192 mg/m³ 8 hours. OELV-15min: 100 ppm 15 minutes. OELV-15min: 384 mg/m³ 15 minutes.</p>
Xylene	<p>NAOSH (Ireland, 5/2021). [xylene mixed isomers] Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV-8hr: 50 ppm 8 hours. OELV-8hr: 221 mg/m³ 8 hours. OELV-15min: 100 ppm 15 minutes. OELV-15min: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Short Term: 400 ppm 15 minutes. Short Term: 1468 mg/m³ 15 minutes. 8 hours: 200 ppm 8 hours. 8 hours: 734 mg/m³ 8 hours.</p>
Methylisobutylketone	<p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). 8 hours: 20 ppm 8 hours. 8 hours: 83 mg/m³ 8 hours. Short Term: 50 ppm 15 minutes.</p>

SECTION 8: Exposure controls/personal protection

Toluene	<p>Short Term: 208 mg/m³ 15 minutes. Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Absorbed through skin. 8 hours: 50 ppm 8 hours. 8 hours: 192 mg/m³ 8 hours.</p>
Xylene	<p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). [Xylenes, mixed isomers, pure] Absorbed through skin. 8 hours: 50 ppm 8 hours. 8 hours: 221 mg/m³ 8 hours. Short Term: 100 ppm 15 minutes. Short Term: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). TWA: 241 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). TWA: 200 mg/m³ 8 hours. STEL: 400 ppm 15 minutes. STEL: 1468 mg/m³ 15 minutes. TWA: 54 ppm 8 hours.</p>
Methylisobutylketone	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours. STEL: 50 ppm 15 minutes. STEL: 208 mg/m³ 15 minutes.</p>
Toluene	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). Absorbed through skin. TWA: 50 mg/m³ 8 hours. STEL: 150 mg/m³ 15 minutes. TWA: 14 ppm 8 hours. STEL: 40 ppm 15 minutes.</p>
Xylene	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). [Xylenes] Absorbed through skin. TWA: 221 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 723 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes.</p>
Ethyl acetate	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 500 mg/m³ 8 hours. TWA: 150 ppm 8 hours. CEIL: 1100 mg/m³ CEIL: 300 ppm</p>
Methylisobutylketone	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours. STEL: 208 mg/m³ 15 minutes. STEL: 50 ppm 15 minutes.</p>
Toluene	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). Absorbed through skin. TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 384 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes.</p>
Xylene	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). [xylene, mixed isomers, pure] Absorbed through skin. STEL: 442 mg/m³ 15 minutes.</p>

SECTION 8: Exposure controls/personal protection

n-Butyl acetate	<p>TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. TWA: 221 mg/m³ 8 hours.</p> <p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 241 mg/m³ 8 hours.</p>
Ethyl acetate	<p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). STEL: 400 ppm 15 minutes. STEL: 1468 mg/m³ 15 minutes. TWA: 200 ppm 8 hours. TWA: 734 mg/m³ 8 hours.</p>
Methylisobutylketone	<p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). TWA: 20 ppm 8 hours. TWA: 83 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 208 mg/m³ 15 minutes.</p>
Toluene	<p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). Absorbed through skin. STEL: 100 ppm 15 minutes. STEL: 384 mg/m³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 192 mg/m³ 8 hours.</p>
Xylene	<p>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). [xylenes, mixed isomers, pure] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 221 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes. TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values STEL: 400 ppm 15 minutes. STEL: 1468 mg/m³ 15 minutes. TWA: 200 ppm 8 hours. TWA: 734 mg/m³ 8 hours.</p>
Methylisobutylketone	<p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 83 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 208 mg/m³ 15 minutes.</p>
Toluene	<p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 384 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes.</p>
Xylene	<p>EU OEL (Europe, 1/2022). [xylene, mixed isomers pure] Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 50 ppm 8 hours. TWA: 221 mg/m³ 8 hours. STEL: 100 ppm 15 minutes.</p>

SECTION 8: Exposure controls/personal protection

n-Butyl acetate	<p>STEL: 442 mg/m³ 15 minutes.</p> <p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022).</p> <p>OEL, 8-h TWA: 241 mg/m³ 8 hours. STEL, 15-min: 723 mg/m³ 15 minutes. STEL, 15-min: 150 ppm 15 minutes. OEL, 8-h TWA: 50 ppm 8 hours.</p>
Ethyl acetate	<p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022).</p> <p>STEL, 15-min: 1468 mg/m³ 15 minutes. OEL, 8-h TWA: 734 mg/m³ 8 hours. STEL, 15-min: 400 ppm 15 minutes. OEL, 8-h TWA: 200 ppm 8 hours.</p>
Methylisobutylketone	<p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022).</p> <p>OEL, 8-h TWA: 104 mg/m³ 8 hours. STEL, 15-min: 208 mg/m³ 15 minutes. OEL, 8-h TWA: 25 ppm 8 hours. STEL, 15-min: 50 ppm 15 minutes.</p>
Toluene	<p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022).</p> <p>OEL, 8-h TWA: 150 mg/m³ 8 hours. STEL, 15-min: 384 mg/m³ 15 minutes. STEL, 15-min: 100 ppm 15 minutes. OEL, 8-h TWA: 39 ppm 8 hours.</p>
Xylene	<p>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022). [xylenes (all isomers)] Absorbed through skin.</p> <p>OEL, 8-h TWA: 210 mg/m³ 8 hours. STEL, 15-min: 442 mg/m³ 15 minutes. STEL, 15-min: 100 ppm 15 minutes. OEL, 8-h TWA: 47.5 ppm 8 hours.</p>
No exposure limit value known.	
n-Butyl acetate	<p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021).</p> <p>TWA: 240 mg/m³ 8 hours. STEL: 720 mg/m³ 15 minutes.</p>
Ethyl acetate	<p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021).</p> <p>TWA: 734 mg/m³ 8 hours. STEL: 1468 mg/m³ 15 minutes.</p>
Naphtha (petroleum), hydrotreated light	<p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [benzin extraction]</p> <p>TWA: 500 mg/m³ 8 hours. STEL: 1500 mg/m³ 15 minutes.</p>
Methylisobutylketone	<p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021).</p> <p>TWA: 83 mg/m³ 8 hours. STEL: 200 mg/m³ 15 minutes.</p>
Toluene	<p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible</p>

SECTION 8: Exposure controls/personal protection

Xylene	<p>concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). Absorbed through skin. TWA: 100 mg/m³ 8 hours. STEL: 200 mg/m³ 15 minutes.</p> <p>Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [xylene – mixed isomers (1,2-, 1,3-, 1,4-)] Absorbed through skin. TWA: 100 mg/m³ 8 hours. STEL: 200 mg/m³ 15 minutes.</p>
n-Butyl acetate	<p>Portuguese Institute of Quality (Portugal, 11/2014). TWA: 150 ppm 8 hours. STEL: 200 ppm 15 minutes.</p>
Ethyl acetate	<p>Portuguese Institute of Quality (Portugal, 11/2014). TWA: 400 ppm 8 hours.</p>
Methylisobutylketone	<p>Portuguese Institute of Quality (Portugal, 11/2014). TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes.</p>
Toluene	<p>Portuguese Institute of Quality (Portugal, 11/2014). Absorbed through skin. TWA: 20 ppm 8 hours.</p>
Xylene	<p>Portuguese Institute of Quality (Portugal, 11/2014). [Xylene] TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes.</p>
No exposure limit value known.	
n-Butyl acetate	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020). [Butyl acetates] TWA: 241 mg/m³, (Butyl acetates) 8 hours. TWA: 50 ppm, (Butyl acetates) 8 hours. STEL: 723 mg/m³, (Butyl acetates) 15 minutes. STEL: 150 ppm, (Butyl acetates) 15 minutes.</p>
Ethyl acetate	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020). TWA: 734 mg/m³ 8 hours. TWA: 200 ppm 8 hours. STEL: 1468 mg/m³ 15 minutes. STEL: 400 ppm 15 minutes.</p>
Methylisobutylketone	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020). Absorbed through skin. TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours. STEL: 166 mg/m³ 15 minutes. STEL: 40 ppm 15 minutes.</p>
Toluene	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020). Absorbed through skin. TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. STEL: 384 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes.</p>
Xylene	<p>Government regulation SR c. 355/2006 (Slovakia, 9/2020). [xylene, mixed isomers] Absorbed through skin. TWA: 221 mg/m³, (xylene, mixed isomers) 8 hours. TWA: 50 ppm, (xylene, mixed isomers) 8 hours. STEL: 442 mg/m³, (xylene, mixed isomers) 15 minutes. STEL: 100 ppm, (xylene, mixed isomers) 15 minutes.</p>

SECTION 8: Exposure controls/personal protection

n-Butyl acetate	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). TWA: 241 mg/m³ 8 hours. TWA: 50 ppm 8 hours. KTV: 723 mg/m³, 4 times per shift, 15 minutes. KTV: 150 ppm, 4 times per shift, 15 minutes.</p>
Ethyl acetate	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). TWA: 734 mg/m³ 8 hours. TWA: 200 ppm 8 hours. KTV: 1468 mg/m³, 4 times per shift, 15 minutes. KTV: 400 ppm, 4 times per shift, 15 minutes.</p>
Methylisobutylketone	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). Absorbed through skin. TWA: 83 mg/m³ 8 hours. TWA: 20 ppm 8 hours. KTV: 208 mg/m³, 4 times per shift, 15 minutes. KTV: 50 ppm, 4 times per shift, 15 minutes.</p>
Toluene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). Absorbed through skin. TWA: 192 mg/m³ 8 hours. TWA: 50 ppm 8 hours. KTV: 384 mg/m³, 4 times per shift, 15 minutes. KTV: 100 ppm, 4 times per shift, 15 minutes.</p>
Xylene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021). [xylene (mixture of isomers)] Absorbed through skin. TWA: 221 mg/m³ 8 hours. TWA: 50 ppm 8 hours. KTV: 442 mg/m³, 4 times per shift, 15 minutes. KTV: 100 ppm, 4 times per shift, 15 minutes.</p>
No exposure limit value known.	
n-Butyl acetate	<p>Work environment authority Regulation 2018:1 (Sweden, 9/2021). [butyl acetate] TWA: 50 ppm 8 hours. TWA: 241 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 723 mg/m³ 15 minutes.</p>
Ethyl acetate	<p>Work environment authority Regulation 2018:1 (Sweden, 9/2021). TWA: 150 ppm 8 hours. TWA: 550 mg/m³ 8 hours. STEL: 300 ppm 15 minutes. STEL: 1100 mg/m³ 15 minutes.</p>
Methylisobutylketone	<p>Work environment authority Regulation 2018:1 (Sweden, 9/2021). TWA: 20 ppm 8 hours. TWA: 83 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 200 mg/m³ 15 minutes.</p>
Toluene	<p>Work environment authority Regulation 2018:1 (Sweden, 9/2021). Absorbed through skin. Ototoxicant. TWA: 50 ppm 8 hours. TWA: 192 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 384 mg/m³ 15 minutes.</p>
Xylene	<p>Work environment authority Regulation 2018:1 (Sweden, 9/2021). [xylene] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 221 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m³ 15 minutes.</p>

SECTION 8: Exposure controls/personal protection

n-Butyl acetate	SUVA (Switzerland, 1/2023). TWA: 50 ppm 8 hours. TWA: 240 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 720 mg/m ³ 15 minutes.
Ethyl acetate	SUVA (Switzerland, 1/2023). STEL: 400 ppm 15 minutes. STEL: 1460 mg/m ³ 15 minutes. TWA: 200 ppm 8 hours. TWA: 730 mg/m ³ 8 hours.
Naphtha (petroleum), hydrotreated light	SUVA (Switzerland, 1/2023). TWA: 500 ppm 8 hours. TWA: 2000 mg/m ³ 8 hours.
Methylisobutylketone	SUVA (Switzerland, 1/2023). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 82 mg/m ³ 8 hours. STEL: 40 ppm 15 minutes. STEL: 164 mg/m ³ 15 minutes.
Toluene	SUVA (Switzerland, 1/2023). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 190 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 760 mg/m ³ 15 minutes.
Xylene	SUVA (Switzerland, 1/2023). [Xylenes (all isomers)] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 440 mg/m ³ 15 minutes.
No exposure limit value known.	

Biological exposure indices

Product/ingredient name	Exposure indices
Toluene	VGU BEI (Austria, 9/2020) BEI Fitness: 250 µg/l, toluene [in blood]. Sampling time: one year. BEI Fitness: 0.8 mg/l, o-cresol [in urine]. Sampling time: one year. BEI Fitness: 130000 /µl, platelets (non-pathological differential blood count) [in blood]. Sampling time: one year. BEI Fitness: 150000 /µl, platelets [in blood]. Sampling time: one year. BEI Fitness: 3700 to 13000 /µl, leukocytes (non-pathological differential blood count) [in blood]. Sampling time: one year. BEI Fitness: 4000 to 13000 /µl, leukocytes [in blood]. Sampling time: one year. BEI Fitness - men: 3.8 million/µl, erythrocytes [in blood]. Sampling time: one year. BEI Fitness - women: 3.2 million/µl, erythrocytes [in blood]. Sampling time: one year. BEI Fitness - men: 12 g/dl, hemoglobin [in blood]. Sampling time: one year. BEI Fitness - women: 10 g/dl, hemoglobin [in blood]. Sampling time: one year.
Xylene	VGU BEI (Austria, 9/2020) [xylenes] BEI Fitness: 1000 µg/l, xylene [in blood]. Sampling time: one year. BEI Fitness: 1.5 g/l, methylhippuricacid [in urine]. Sampling time: one year.
No exposure indices known.	
Toluene	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021) BLV: 1.6 mmol/mmol creatinine, hippuric acid [in urine]. Sampling time: after the end of the exposure or the end of the work shift.

SECTION 8: Exposure controls/personal protection

Methylisobutylketone	<p>Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) BEI: 3.5 mg/l, 4-methylpentan-2-one [in urine]. Sampling time: not critical. BEI: 35 nmol/l, 4-methylpentan-2-one [in urine]. Sampling time: not critical.</p>
Toluene	<p>Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) BEI: 20 ppm, toluene [in end exhaled air]. Sampling time: during exposure. BEI: 0.83 µmol/l, toluene [in end exhaled air]. Sampling time: during exposure. BEI: 1 mg/l, toluene [in blood]. Sampling time: at the end of the work shift. BEI: 10.85 µmol/l, toluene [in blood]. Sampling time: at the end of the work shift. BEI: 1.05 mmol/mol creatinine, o-cresol [in urine]. Sampling time: at the end of the work shift. BEI: 1 mg/g creatinine, o-cresol [in urine]. Sampling time: at the end of the work shift. BEI: 1.58 mol/mol creatinine, hippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 2.5 g/g creatinine, hippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
Xylene	<p>Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) [xylene] BEI: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 14.13 µmol/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 0.88 mol/mol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 1.5 g/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Toluene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) BEI: 500 nmol/l, toluene [in blood]. Sampling time: the morning after the working day.</p>
Xylene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Xylene] BEI: 5 mmol/l, methylhippuricacid [in urine]. Sampling time: at the end of the work shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	

SECTION 8: Exposure controls/personal protection

Methylisobutylketone	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022) BEI: 35 µmol/l, methyl-iso-butyl-ketone [in urine]. Sampling time: at the end of the shift. BEI: 3.5 mg/l, methyl-iso-butyl-ketone [in urine]. Sampling time: at the end of the shift.</p>
Toluene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022) BEI: 1 mg/g creatinine, o-cresol [in urine]. Sampling time: at the end of the shift. BEI: 1 µmol/mmol creatinine, o-cresol [in urine]. Sampling time: at the end of the shift.</p>
Xylene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022) [xylene] BEI: 1500 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift. BEI: 860 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.</p>
No exposure indices known.	
Methylisobutylketone	<p>NAOSH (Ireland, 1/2011) BMGV: 1 mg/l, MIBK [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.</p>
Toluene	<p>NAOSH (Ireland, 1/2011) BMGV: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases. BMGV: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases. BMGV: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.</p>
Xylene	<p>NAOSH (Ireland, 1/2011) [Xylene] BMGV: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.</p>
No exposure indices known.	
Toluene	<p>Minister Cabinet Regulations No.325 - BEI (Latvia, 7/2018) BEI: 0.05 mg/l, toluene [in blood]. BEI: 1.6 g/g creatinine, hippuric acid [in urine]. Sampling time: end of the shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Methylisobutylketone	<p>Portuguese Institute of Quality (Portugal, 11/2014) BEI: 1 mg/l, methylisobutylketone (MIBK) [in urine]. Sampling time: end of shift.</p>
Toluene	<p>Portuguese Institute of Quality (Portugal, 11/2014) BEI: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift. BEI: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift. BEI: 0.02 mg/l, toluene [in blood]. Sampling time: end of shift at the end of the workweek.</p>
Xylene	<p>Portuguese Institute of Quality (Portugal, 11/2014) [Xylenes] BEI: 1.5 g/g creatinine, (o, m, p) -methyl-boronic acids [in urine]. Sampling time: end of shift.</p>

SECTION 8: Exposure controls/personal protection

No exposure indices known.

Methylisobutylketone

Government regulation SR c. 355/2006 (Slovakia, 9/2020)

BLV: 2.67 µmol/mmol creatinine, hexon [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 2.36 mg/g creatinine, hexon [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 35.4 µmol/l, hexon [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 3.5 mg/l, hexon [in urine]. Sampling time: at the end of exposure or work shift.

Toluene

Government regulation SR c. 355/2006 (Slovakia, 9/2020)

BLV: 1010 µmol/mmol creatinine, hippuric acid [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1.08 µmol/mmol creatinine, o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

BLV: 1600 mg/g creatinine, hippuric acid [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1.03 mg/g creatinine, o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

BLV: 13399 µmol/l, hippuric acid [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 14.3 µmol/l, o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

BLV: 6517 nmol/l, toluene [in blood]. Sampling time: at the end of exposure or work shift.

BLV: 2401 mg/l, hippuric acid [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1.5 mg/l, o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

BLV: 600 µg/l, toluene [in blood]. Sampling time: at the end of exposure or work shift.

Xylene

Government regulation SR c. 355/2006 (Slovakia, 9/2020) [xylene, all isomers]

BLV: 781 µmol/mmol creatinine, sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1334 mg/g creatinine, sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 10355 µmol/l, sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 14.6 µmol/l, xylene [in blood]. Sampling time: at the end of exposure or work shift.

BLV: 2000 mg/l, sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of exposure or work shift.

Methylisobutylketone

Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021)

BAT: 0.7 mg/l, 4-methylpentan-2-one [in urine]. Sampling time: at the end of the work shift.

Toluene

Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021)

BAT: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: at the end of the work shift, at long-term exposure: at the end of the work shift after several consecutive workdays.

BAT: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure.

SECTION 8: Exposure controls/personal protection

<p>Xylene</p>	<p>BAT: 75 µg/l, toluene [in urine]. Sampling time: at the end of the work shift.</p> <p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021) [xylene (all isomers)] BAT: 2 g/l, methylhippuric acid (all isomers) [in urine]. Sampling time: at the end of the work shift.</p>
<p>No exposure indices known.</p>	
<p>No exposure indices known.</p>	
<p>Methylisobutylketone</p>	<p>SUVA (Switzerland, 1/2023) BEI: 0.7 mg/l, 4-methylpentan-2-one [in urine]. Sampling time: immediately after exposure or after working hours.</p>
<p>Toluene</p>	<p>SUVA (Switzerland, 1/2023) BEI: 2 g/g creatinine, hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift. BEI: 1.26 mmol/mmol creatinine, hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift. BEI: 0.5 mg/l, o-cresol [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift. BEI: 4.62 µmol/l, o-cresol [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift. BEI: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 6.48 µmol/l, toluene [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 75 µg/l, toluene [in urine]. Sampling time: immediately after exposure or after working hours.</p>
<p>Xylene</p>	<p>SUVA (Switzerland, 1/2023) [Xylene, all isomers] BEI: 2 g/l, methyl hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours.</p>
<p>No exposure indices known.</p>	

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	Type	Exposure	Value	Population	Effects
n-Butyl acetate	DNEL	Short term Oral	2 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	2 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	6 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	11 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	35.7 mg/m ³	General population	Local
	DNEL	Short term	300 mg/m ³	General	Local

SECTION 8: Exposure controls/personal protection

Ethyl acetate	DNEL	Inhalation Short term	300 mg/m ³	population General population	Systemic	
	DNEL	Inhalation Long term	300 mg/m ³	Workers	Local	
	DNEL	Inhalation Short term	600 mg/m ³	Workers	Local	
	DNEL	Inhalation Short term	600 mg/m ³	Workers	Systemic	
	DNEL	Inhalation Long term	3.4 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	7 mg/kg bw/day	Workers	Systemic	
	DNEL	Long term Inhalation	12 mg/m ³	General population	Systemic	
	DNEL	Long term Inhalation	48 mg/m ³	Workers	Systemic	
	DNEL	Long term Oral	4.5 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	37 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Dermal	63 mg/kg bw/day	Workers	Systemic	
	DNEL	Long term Inhalation	367 mg/m ³	General population	Local	
	DNEL	Long term Inhalation	367 mg/m ³	General population	Systemic	
	DNEL	Short term Inhalation	734 mg/m ³	General population	Local	
	DNEL	Short term Inhalation	734 mg/m ³	General population	Systemic	
	DNEL	Long term Inhalation	734 mg/m ³	Workers	Local	
	DNEL	Long term Inhalation	734 mg/m ³	Workers	Systemic	
	Naphtha (petroleum), hydrotreated light	DNEL	Short term Inhalation	1468 mg/ m ³	Workers	Local
		DNEL	Short term Inhalation	1468 mg/ m ³	Workers	Systemic
		DNEL	Long term Inhalation	0.41 mg/m ³	General population	Systemic
DNEL		Long term Inhalation	1.9 mg/m ³	Workers	Systemic	
DNEL		Long term Oral	149 mg/kg bw/day	General population	Systemic	
DNEL		Long term Dermal	149 mg/kg bw/day	General population	Systemic	
DNEL		Long term Inhalation	178.57 mg/ m ³	General population	Local	
DNEL		Short term Inhalation	640 mg/m ³	General population	Local	
DNEL		Long term Inhalation	837.5 mg/ m ³	Workers	Local	
DNEL		Short term Inhalation	1066.67 mg/m ³	Workers	Local	
DNEL		Short term Inhalation	1152 mg/ m ³	General population	Systemic	
DNEL		Short term Inhalation	1286.4 mg/ m ³	Workers	Systemic	
DNEL		Long term Dermal	300 mg/kg bw/day	Workers	Systemic	
Methylisobutylketone		DNEL	Long term Oral	4.2 mg/kg bw/day	General population	Systemic
		DNEL	Long term Dermal	4.2 mg/kg bw/day	General population	Systemic
		DNEL	Long term Dermal	11.8 mg/ bw/day	Workers	Systemic
	DNEL	Long term Dermal	11.8 mg/ bw/day	Workers	Systemic	

SECTION 8: Exposure controls/personal protection

Toluene	DNEL	Long term Inhalation	kg bw/day 14.7 mg/m ³	General population	Local	
	DNEL	Long term Inhalation	14.7 mg/m ³	General population	Systemic	
	DNEL	Long term Inhalation	83 mg/m ³	Workers	Local	
	DNEL	Long term Inhalation	83 mg/m ³	Workers	Systemic	
	DNEL	Short term Inhalation	155.2 mg/m ³	General population	Local	
	DNEL	Short term Inhalation	155.2 mg/m ³	General population	Systemic	
	DNEL	Short term Inhalation	208 mg/m ³	Workers	Local	
	DNEL	Short term Inhalation	208 mg/m ³	Workers	Systemic	
	DNEL	Long term Oral	8.13 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Inhalation	56.5 mg/m ³	General population	Local	
	DNEL	Long term Inhalation	56.5 mg/m ³	General population	Systemic	
	DNEL	Long term Inhalation	192 mg/m ³	Workers	Local	
	DNEL	Long term Inhalation	192 mg/m ³	Workers	Systemic	
	DNEL	Long term Dermal	226 mg/kg bw/day	General population	Systemic	
	DNEL	Short term Inhalation	226 mg/m ³	General population	Local	
	DNEL	Short term Inhalation	226 mg/m ³	General population	Systemic	
	Xylene	DNEL	Long term Dermal	384 mg/kg bw/day	Workers	Systemic
		DNEL	Short term Inhalation	384 mg/m ³	Workers	Local
DNEL		Short term Inhalation	384 mg/m ³	Workers	Systemic	
DNEL		Long term Inhalation	65.3 mg/m ³	General population	Local	
DNEL		Short term Inhalation	260 mg/m ³	General population	Local	
DNEL		Short term Inhalation	260 mg/m ³	General population	Systemic	
DNEL		Long term Inhalation	221 mg/m ³	Workers	Local	
DNEL		Long term Oral	12.5 mg/kg bw/day	General population	Systemic	
DNEL		Long term Inhalation	65.3 mg/m ³	General population	Systemic	
DNEL		Long term Dermal	125 mg/kg bw/day	General population	Systemic	
DNEL		Long term Dermal	212 mg/kg bw/day	Workers	Systemic	
DNEL		Long term Inhalation	221 mg/m ³	Workers	Systemic	
DNEL		Short term Inhalation	442 mg/m ³	Workers	Local	
DNEL		Short term Inhalation	442 mg/m ³	Workers	Systemic	

PNECs

No PNECs available

SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Recommendations : Wear suitable gloves tested to EN374.

< 1 hour (breakthrough time): Nitrile gloves. thickness > 0.3 mm

1 - 4 hours (breakthrough time): 4H / Silver Shield® gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

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 : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Filter type: A

Filter type (spray application): A P

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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.

Colour : Colourless.

Odour : Slight

SECTION 9: Physical and chemical properties

Odour threshold : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range :

Ingredient name	°C	°F	Method
Ethyl acetate	77.1	170.8	
Toluene	110.6	231.1	

Flammability : Not available.

Lower and upper explosion limit : Lower: 0.8%
Upper: 11.5%

Flash point : Closed cup: -1°C (30.2°F)

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Naphtha (petroleum), hydrotreated light	280 to 470	536 to 878	DIN EN 14522
n-Butyl acetate	415	779	EU A.15

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Not available.

Solubility(ies) :

Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/ water : Not applicable.

Vapour pressure :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Ethyl acetate	81.59163	10.9				
Naphtha (petroleum), hydrotreated light	42.15358	5.6	OECD 104	357.48039	47.7	OECD 104

Relative density : Not available.

Density : 0.9 g/cm³

Vapour density : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : Not applicable.

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 : The product is stable.

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

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10: Stability and reactivity

10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidising materials

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-Butyl acetate	LC50 Inhalation Vapour	Rat	0.74 mg/l	4 hours
	LD50 Dermal	Rabbit	14112 mg/kg	-
	LD50 Oral	Rat	10760 mg/kg	-
Ethyl acetate	LD50 Oral	Rat	5620 mg/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
Methylisobutylketone	LD50 Oral	Rat	2080 mg/kg	-
Toluene	LC50 Inhalation Vapour	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Xylene	LC50 Inhalation Vapour	Rat	21.7 mg/l	4 hours
	LD50 Oral	Rat	4300 mg/kg	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Route	ATE value
Dermal	88888.89 mg/kg
Inhalation (vapours)	97.89 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-Butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Methylisobutylketone	Eyes - Moderate irritant	Rabbit	-	24 hours 100 uL	-
	Eyes - Severe irritant	Rabbit	-	40 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Eyes - Mild irritant	Rabbit	-	870 ug	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 uL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
Xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 uL	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Sensitisation

Conclusion/Summary : May cause an allergic skin reaction.

Mutagenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Carcinogenicity

Conclusion/Summary : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Reproductive toxicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
n-Butyl acetate	Category 3	-	Narcotic effects
Ethyl acetate	Category 3	-	Narcotic effects
Methylisobutylketone	Category 3	-	Narcotic effects
Toluene	Category 3	-	Narcotic effects
Xylene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Toluene	Category 2	-	-
Xylene	Category 2	oral, inhalation	-

Aspiration hazard

Product/ingredient name	Result
Naphtha (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1

Information on 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 : May cause an allergic skin reaction.

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:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

SECTION 11: Toxicological information

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 : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
n-Butyl acetate	Acute LC50 32 mg/l Marine water	Crustaceans - <i>Artemia salina</i>	48 hours
	Acute LC50 18000 µg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
Ethyl acetate	Acute EC50 2500000 µg/l Fresh water	Algae - <i>Selenastrum sp.</i>	96 hours
	Acute LC50 750000 µg/l Fresh water	Crustaceans - <i>Gammarus pulex</i>	48 hours
	Acute LC50 154000 µg/l Fresh water	Daphnia - <i>Daphnia cucullata</i>	48 hours
	Acute LC50 212500 µg/l Fresh water	Fish - <i>Heteropneustes fossilis</i>	96 hours
	Chronic NOEC 12 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days
	Chronic NOEC 75.6 mg/l Fresh water	Fish - <i>Pimephales promelas</i> - Embryo	32 days
Methylisobutylketone	Acute LC50 505000 µg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - <i>Pimephales promelas</i> - Embryo	33 days
Toluene	Acute EC50 12500 µg/l Fresh water	Algae - <i>Pseudokirchneriella subcapitata</i>	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - <i>Gammarus pseudolimnaeus</i> - Adult	48 hours
	Acute EC50 5.56 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - <i>Oncorhynchus kisutch</i> - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days

Conclusion/Summary : Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Conclusion/Summary : This product has not been tested for biodegradation.

12.3 Bioaccumulative potential

SECTION 12: Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
n-Butyl acetate	2.3	-	Low
Ethyl acetate	0.68	30	Low
Naphtha (petroleum), hydrotreated light	2.2 to 5.2	10 to 2500	High
Methylisobutylketone	1.9	-	Low
Toluene	2.73	90	Low
Xylene	3.12	8.1 to 25.9	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.

European waste catalogue (EWC) : 08.01.11





Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1993	UN1993	UN1993	UN1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (n-butyl acetate, ethyl acetate)	FLAMMABLE LIQUID, N.O.S. (n-butyl acetate, ethyl acetate)	FLAMMABLE LIQUID, N.O.S. (ethyl acetate, xylene)	FLAMMABLE LIQUID, N.O.S. (ethyl acetate, xylene)
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	Yes.	No.	No.

Additional information

ADR/RID : **Special provisions** 640 (C)
Tunnel code (D/E)

ADN : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.
Special provisions 640 (C)

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 relevant/applicable due to nature of the product.

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 authorisation

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

Product/ingredient name	%	Designation [Usage]
ALPOLAN DUOSCAN 5483-02	≥90	3
Toluene	<3	48

Labelling :

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

SECTION 15: Regulatory information

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Explosive precursors : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

P5c

National regulations

Austria

VbF class : A I
Very dangerous flammable liquid.

Limitation of the use of organic solvents : Permitted.

Czech Republic

Denmark

Finland

France

Germany

Hazardous incident ordinance

Italy

D.Lgs. 152/06 : Not determined.

Netherlands

Ministry of Social Affairs and Employment (SZW) - Carcinogenic substances and processes, mutagenic or reprotoxic substances

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
Naphtha (petroleum), hydrotreated light	Listed	Listed	-	-	-
tolueen	-	-	-	Development 2	-
xylene	-	-	-	Development 2	-

Water Discharge Policy (ABM) : Z(1) Non biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/ mutagenicity/ reprotoxicity/ bioacumulative potential/ toxicity or persistence). Decontamination effort: Z

Norway

Sweden

Flammable liquid class (SRVFS 2005:10) : 1

Switzerland

VOC content : VOC (w/w): 81.5%

International regulations

SECTION 15: Regulatory information

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

15.2 Chemical safety assessment

: This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
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
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Flam. Liq. 2, H225 Eye Irrit. 2, H319 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H336 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method

[Full text of abbreviated H statements](#)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
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.
H351	Suspected of causing cancer.
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 \[CLP/GHS\]](#)

SECTION 16: Other information

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 2	CARCINOGENICITY - Category 2
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. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

Date of issue/ Date of revision : 20/12/2023

Date of previous issue : No previous validation

Version : 1

ALPOLAN DUOSCAN 5483-02

All variants

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

