



SAFETY DATA SHEET

Date of issue/Date of revision

: 28 April 2025

Version

: 1.06

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

1.1 Product identifier

Product name : SIGMADUR 450E RESIN LIEBHERR YELLOW

Product code : 000001099868

Other means of identification

00318220; 00318221 ; 00318222 ; 00318223 ; 00443977

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

Product use : Professional applications, Used by spraying.

Use of the substance/
mixture : Coating.

Uses advised against : Product is not intended, labelled or packaged for consumer use.

1.3 Details of the supplier of the safety data sheet

Sigma Paint Saudi Arabia Ltd.
PO Box 7509
Dammam 31472
Saudi Arabia
Tel: 00966 138 47 31 00
Fax: 00966 138 47 17 34

e-mail address of person
responsible for this SDS : ndpic@sfda.gov.sa

1.4 Emergency telephone
number : 00966 138473100 extn 1001

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. 3, H226

Skin Sens. 1, H317

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

: Warning

Code : 000001099868	Date of issue/Date of revision : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW	

SECTION 2: Hazards identification

Hazard statements	: Flammable liquid and vapour. May cause an allergic skin reaction. May cause drowsiness or dizziness. Harmful to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Wear protective gloves. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment.
Response	: IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
Storage	: Store in a well-ventilated place. Keep container tightly closed.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations. P280, P210, P273, P304 + P312, P403 + P233, P501
Hazardous ingredients	: <input checked="" type="checkbox"/> -methoxy-1-methylethyl acetate; n-butyl acetate; Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate; Fatty acids, C14-18 and C16-18-unsatd., maleated; methyl methacrylate; 2-hydroxyethyl methacrylate and maleic anhydride
Supplemental label elements	: Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Not applicable.
Special packaging requirements	
Containers to be fitted with child-resistant fastenings	: Not applicable.
Tactile warning of danger	: Not applicable.
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	: Prolonged or repeated contact may dry skin and cause irritation. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C/140F.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type

Code : 000001099868

Date of issue/Date of revision

: 28 April 2025

SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 3: Composition/information on ingredients

2-methoxy-1-methylethyl acetate	REACH #: 01-2119475791-29 EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	≥10 - ≤25	Flam. Liq. 3, H226 STOT SE 3, H336	-	[1] [2]
n-butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥10 - ≤18	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	[1] [2]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7	≥5.0 - <10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Dermal] = 1700 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
reaction mass of N, N'-ethane-1,2-diylbis (hexanamide) and 12-hydroxy-N-[2-[(1-oxyhexyl)amino]ethyl] octadecanamide and N, N'-ethane-1,2-diylbis (12-hydroxyoctadecanamide)	REACH #: 01-0000017860-69 EC: 432-430-3 CAS: SUB102035 Index: 616-200-00-1	≥1.0 - ≤5.0	Aquatic Chronic 4, H413	-	[1]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥1.0 - ≤5.0	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Inhalation (vapours)] = 17.8 mg/l	[1] [2]
Hydrocarbons, C9, aromatics < 0.1% cumene	REACH #: 01-2119455851-35 EC: 918-668-5 CAS: 128601-23-0	≤1.8	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	-	[1]
Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	REACH #: 01-2119491304-40 EC: 915-687-0 CAS: 1065336-91-5	≤1.0	Skin Sens. 1A, H317 Repr. 2, H361f Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]
Fatty acids, C14-18 and C16-18-unsatd., maleated	REACH #: 01-2119978273-29 EC: 288-306-2 CAS: 85711-46-2	≤0.30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317	-	[1]
methyl methacrylate	REACH #: 01-2119452498-28 EC: 201-297-1 CAS: 80-62-6	≤0.30	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335	-	[1] [2]

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 3: Composition/information on ingredients

2-hydroxyethyl methacrylate	Index: 607-035-00-6 EC: 212-782-2 CAS: 868-77-9 Index: 607-124-00-X	≤0.30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317	-	[1]
maleic anhydride	REACH #: 01-2119472428-31 EC: 203-571-6 CAS: 108-31-6 Index: 607-096-00-9	≤0.10	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (respiratory system) (inhalation) EUH071 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 400 mg/ kg Skin Sens. 1, H317: C ≥ 0.001%	[1] [2]

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.

[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** : 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 recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : No specific data.

Code : 000001099868 **Date of issue/Date of revision** : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 4: First aid measures

- 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
dryness
cracking
- 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** : 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 oxides
nitrogen oxides
sulfur oxides
metal oxide/oxides
Formaldehyde.

5.3 Advice for firefighters

- Special precautions 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.

Code : 000001099868

Date of issue/Date of revision

: 28 April 2025

SIGMADUR 450E RESIN LIEBHERR YELLOW

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. 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.

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 35°C (32 to 95°F). 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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

See Section 1.2 for Identified uses.

SECTION 8: Exposure controls/personal protection

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).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
barium sulfate	<p>Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) TWA 8 hours: 10 mg/m³. Cabinet Decree (12) of 2006 Regarding Regulation Concerning Protection of Air from Pollution (United Arab Emirates, 5/2006) TWA 8 hours: 10 mg/m³. ACGIH TLV (United States, 1/2024) TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.</p>
chrome antimony titanium buff rutile	<p>Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) [antimony and compounds] TWA 8 hours: 0.5 mg/m³ (as Sb). Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) [chromium (III) inorganic compounds] A4. TWA 8 hours: 0.5 mg/m³ (as Cr). ACGIH TLV (United States) TWA: 0.5 mg/m³. Form: Total dust.</p>
n-butyl acetate	<p>Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) STEL 15 minutes: 950 mg/m³. STEL 15 minutes: 200 ppm. TWA 8 hours: 713 mg/m³. TWA 8 hours: 150 ppm. ACGIH TLV (United States, 1/2024) [Butyl acetates] STEL 15 minutes: 150 ppm. TWA 8 hours: 50 ppm.</p>
xylene	<p>Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) [xylene (o, m & p isomers)] A4. STEL 15 minutes: 651 mg/m³. STEL 15 minutes: 150 ppm. TWA 8 hours: 434 mg/m³. TWA 8 hours: 100 ppm.</p>

Code : 000001099868

Date of issue/Date of revision

: 28 April 2025

SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 8: Exposure controls/personal protection

reaction mass of N, N'-ethane1,2-diylbis (hexanamide) and 12-hydroxy-N-[2-[(1-oxyhexyl) amino]ethyl]octadecanamide and N, N'-ethane-1,2-diylbis(12-hydroxyoctadecan amide) ethylbenzene

methyl methacrylate

maleic anhydride

Cabinet Decree (12) of 2006 Regarding Regulation Concerning Protection of Air from Pollution (United Arab Emirates, 5/2006) [xylene (all isomers)]

STEL 15 minutes: 150 ppm.

TWA 8 hours: 434 mg/m³.

STEL 15 minutes: 651 mg/m³.

TWA 8 hours: 100 ppm.

ACGIH TLV (United States, 1/2024) [p-xylene and mixtures containing p-xylene] A4. Ototoxicant.

TWA 8 hours: 20 ppm.

ACGIH TLV (United States)

TWA: 10 mg/m³. Form: Total dust.

TWA: 3 mg/m³. Form: Respirable.

Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) A3.

STEL 15 minutes: 543 mg/m³.

STEL 15 minutes: 125 ppm.

TWA 8 hours: 100 ppm.

TWA 8 hours: 434 mg/m³.

Cabinet Decree (12) of 2006 Regarding Regulation Concerning Protection of Air from Pollution (United Arab Emirates, 5/2006)

STEL 15 minutes: 125 ppm.

TWA 8 hours: 434 mg/m³.

STEL 15 minutes: 543 mg/m³.

TWA 8 hours: 100 ppm.

ACGIH TLV (United States, 1/2024) A3. Ototoxicant.

TWA 8 hours: 20 ppm.

Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) A4. Sensitiser.

TWA 8 hours: 205 mg/m³.

TWA 8 hours: 50 ppm.

STEL 15 minutes: 410 mg/m³.

STEL 15 minutes: 100 ppm.

Cabinet Decree (12) of 2006 Regarding Regulation Concerning Protection of Air from Pollution (United Arab Emirates, 5/2006)

TWA 8 hours: 410 mg/m³.

TWA 8 hours: 100 ppm.

ACGIH TLV (United States, 1/2024) A4. Skin sensitiser.

TWA 8 hours: 50 ppm.

STEL 15 minutes: 100 ppm.

Abu Dhabi - OSHAD - Occupational air quality threshold limit values (United Arab Emirates, 7/2016) A4. Sensitiser.

TWA 8 hours: 0.4 mg/m³.

TWA 8 hours: 0.1 ppm.

Cabinet Decree (12) of 2006 Regarding Regulation Concerning Protection of Air from Pollution (United Arab Emirates, 5/2006)

TWA 8 hours: 1 mg/m³.

TWA 8 hours: 0.25 ppm.

ACGIH TLV (United States, 1/2024) A4. Skin sensitiser , Inhalation sensitiser.

TWA 8 hours: 0.01 mg/m³. Form: Inhalable fraction and vapor.

Code : 000001099868

Date of issue/Date of revision

: 28 April 2025

SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 8: Exposure controls/personal protection

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.

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 glasses with side shields.

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. When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended. 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.

Gloves : butyl rubber

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 :

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.

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

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 : Yellow.
Odour : Aromatic.
Odour threshold : Not available.
Melting point/freezing point : Not determined.
Initial boiling point and boiling range : >37.78°C
Flammability : Not determined. There are no data available on the mixture itself.
Upper/lower flammability or explosive limits : Not available.
Flash point : Closed cup: 33°C
Auto-ignition temperature :

Ingredient name	°C	°F	Method
Hydrocarbons, C9, aromatics < 0.1% cumene	280 to 470	536 to 878	

- Decomposition temperature** : Stable under recommended storage and handling conditions (see Section 7).
pH : Not applicable. insoluble in water.
Viscosity : Dynamic (room temperature): Not available.
 Kinematic (room temperature): >400 mm²/s
 Kinematic (40°C): >21 mm²/s

Solubility(ies)

Media	Result
cold water	Not soluble

- 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
n-butyl acetate	11.25096	1.5	DIN EN 13016-2			

- Relative density** : 1.43
Explosive properties : The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.
Oxidising properties : Product does not present an oxidizing hazard.
Particle characteristics
Median particle size : Not applicable.

9.2 Other information

- Explosive properties** : The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.
Oxidising properties : Product does not present an oxidizing hazard.

No additional information.

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW

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** : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
- 10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
- 10.6 Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides sulfur oxides Formaldehyde. metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly.

May cause an allergic skin reaction.

May cause drowsiness or dizziness.

Acute toxicity

Product/ingredient name	Result	Dose / Exposure
2-methoxy-1-methylethyl acetate	Rabbit - Dermal - LD50	>5 g/kg
	Rat - Oral - LD50	6190 mg/kg
	Rat - Inhalation - LC50 Vapour	30 mg/l [4 hours]
n-butyl acetate	Rabbit - Dermal - LD50	>17600 mg/kg
	Rat - Oral - LD50	10.768 g/kg
	Rat - Inhalation - LC50 Vapour	2000 ppm [4 hours]
	Rat - Inhalation - LC50 Vapour	>21.1 mg/l [4 hours]
XYLENES	Rat - Oral - LD50	4.3 g/kg
	Rabbit - Dermal - LD50	1.7 g/kg
	Rat - Oral - LD50	>2000 mg/kg
reaction mass of N, N'-ethane1,2-diylbis (hexanamide) and 12-hydroxy-N-[2-(1-oxyhexyl)amino]ethyl octadecanamide and N, N'-ethane-1,2-diylbis(12-hydroxyoctadecan amide)		
	Rat - Dermal - LD50	>2000 mg/kg
	Rat - Oral - LD50	3.5 g/kg
	Rabbit - Dermal - LD50	17.8 g/kg
	Rat - Inhalation - LC50 Vapour	17.8 mg/l [4 hours]
	Rat - Oral - LD50	8400 mg/kg
	<i>Toxic effects:</i> Behavioral - Somnolence (general depressed activity) Behavioral - Tremor Lung, Thorax, or Respiration - Other changes	
	Rabbit - Male, Female - Dermal - LD50	>2000 mg/kg
	Rat - Male, Female - Oral - LD50	3230 mg/kg
Reaction mass of Bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate		
	Rat - Dermal - LD50	>3170 mg/kg

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 11: Toxicological information

methyl methacrylate	Rat - Oral - LD50 <i>Toxic effects:</i> Behavioral - Muscle weakness Behavioral - Coma Lung, Thorax, or Respiration - Respiratory depression Rabbit - Dermal - LD50 <i>Toxic effects:</i> Skin After systemic exposure - Dermatitis, other Rat - Inhalation - LC50 Vapour	7872 mg/kg >5 g/kg 78000 mg/m ³ [4 hours]
2-hydroxyethyl methacrylate	Rat - Oral - LD50 <i>Toxic effects:</i> Behavioral - Coma Rabbit - Dermal - LD50 Rabbit - Dermal - LD50 Rat - Oral - LD50	5050 mg/kg >5 g/kg 2620 mg/kg 400 mg/kg
maleic anhydride		

Acute toxicity estimates

Route	ATE value
Dermal	28577.59 mg/kg
Inhalation (vapours)	166.02 mg/l

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

Irritation/Corrosion

Product/ingredient name	Result
xylene	Rabbit - Skin - Moderate irritant Amount/concentration applied: 500 mg Duration of treatment/exposure: 24 hours

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Eyes : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Conclusion/Summary

Skin : May cause an allergic skin reaction.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

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
2-methoxy-1-methylethyl acetate	Category 3	-	Narcotic effects
n-butyl acetate	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
Hydrocarbons, C9, aromatics < 0.1% cumene	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
methyl methacrylate	Category 3	-	Respiratory tract irritation

Conclusion/Summary (Product) :

May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure)

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene maleic anhydride	Category 2 Category 1	- inhalation	hearing organs respiratory system

Conclusion/Summary (Product) :

Based on available data, the classification criteria are not met.

Aspiration hazard

Product/ingredient name	Result
xylene ethylbenzene Hydrocarbons, C9, aromatics < 0.1% cumene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

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

Information on likely routes of exposure : Not available.

Potential acute health effects

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Ingestion** : Can cause central nervous system (CNS) depression.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Eye contact** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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

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

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 11: Toxicological information

- Carcinogenicity** : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.
Other information : Not available.

Prolonged or repeated contact may dry skin and cause irritation. Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapour/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C/140F. Avoid contact with skin and clothing.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

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

Product/ingredient name	Result	Species	Dose / Exposure
2-methoxy-1-methylethyl acetate	Acute - LC50 - Fresh water	Fish - Trout - <i>Oncorhynchus mykiss</i>	134 mg/l [96 hours]
n-butyl acetate	Acute - LC50	Fish	18 mg/l [96 hours]
reaction mass of N, N'-ethane-1,2-diylbis (hexanamide) and 12-hydroxy-N-[2-[(1-oxyhexyl) amino]ethyl]octadecanamide and N, N'-ethane-1,2-diylbis (12-hydroxyoctadecanamide)	Acute - LC50	Fish	>1000 mg/l [96 hours]
ethylbenzene	Acute - EC50 - Fresh water	Daphnia	1.8 mg/l [48 hours]
	Chronic - NOEC - Fresh water	Daphnia - <i>Ceriodaphnia dubia</i>	1 mg/l
Hydrocarbons, C9, aromatics < 0.1% cumene	LC50	Fish	9.2 mg/l [96 hours]
Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	LC50	Fish	0.9 mg/l [96 hours]
	EC50	Algae	1.68 mg/l [72 hours]

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

12.2 Persistence and degradability

Code : 000001099868 Date of issue/Date of revision : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
2-methoxy-1-methylethyl acetate	-	83% [28 days] - Readily		
n-butyl acetate	TEPA and OECD 301D	83% [28 days] - Readily		
ethylbenzene	-	79% [10 days] - Readily		
Hydrocarbons, C9, aromatics < 0.1% cumene	-	78% [28 days]		

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-methoxy-1-methylethyl acetate	-	-	Readily
n-butyl acetate	-	-	Readily
xylene	-	-	Readily
ethylbenzene	-	-	Readily
Hydrocarbons, C9, aromatics < 0.1% cumene	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2-methoxy-1-methylethyl acetate	1.2	-	Low
n-butyl acetate	2.3	-	Low
xylene	3.12	7.4 to 18.5	Low
ethylbenzene	3.6	79.43	Low
Hydrocarbons, C9, aromatics < 0.1% cumene	3.7 to 4.5	10 to 2500	High
methyl methacrylate	1.38	-	Low
2-hydroxyethyl methacrylate	0.42	-	Low
maleic anhydride	-2.78	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logK _{oc}	K _{oc}
2-methoxy-1-methylethyl acetate	0.36	2.31363
n-butyl acetate	1.52	33.2139
ethylbenzene	2.23	170.406
methyl methacrylate	1.22	16.6906
2-hydroxyethyl methacrylate	1.32	20.9282
maleic anhydride	1.06	11.4841

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

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.

Code : 000001099868 **Date of issue/Date of revision** : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 12: Ecological information

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

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 : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances

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.

Type of packaging	European waste catalogue (EWC)
Container	15 01 06 mixed packaging

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

	ADR/RID	IMDG	IATA
14.1 UN number or ID number	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT	PAINT	PAINT
14.3 Transport hazard class(es)	3	3	3
14.4 Packing group	III	III	III
14.5 Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Code : 000001099868 **Date of issue/Date of revision** : 28 April 2025
SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 14: Transport information

Additional information

ADR/RID : This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.
Tunnel code : (D/E)
IMDG : This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.
IATA : None identified.

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 Transport in bulk according to IMO instruments : Not applicable.

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 : Not applicable.

Other national and international regulations.

Explosive precursors : Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

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

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]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Full text of abbreviated H statements

Code : 000001099868 **Date of issue/Date of revision** : 28 April 2025
 SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 16: Other information

- : H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- H413 May cause long lasting harmful effects to aquatic life.
- EUH066 Repeated exposure may cause skin dryness or cracking.
- EUH071 Corrosive to the respiratory tract.

Full text of classifications [CLP/GHS]

- : Acute Tox. 4 ACUTE TOXICITY - Category 4
- Aquatic Acute 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
- Aquatic Chronic 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
- Aquatic Chronic 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
- Aquatic Chronic 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
- Aquatic Chronic 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4
- Asp. Tox. 1 ASPIRATION HAZARD - Category 1
- Eye Dam. 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
- 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
- Resp. Sens. 1 RESPIRATORY SENSITISATION - Category 1
- Skin Corr. 1B SKIN CORROSION/IRRITATION - Category 1B
- Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2
- Skin Sens. 1 SKIN SENSITISATION - Category 1
- Skin Sens. 1A SKIN SENSITISATION - Category 1A
- Skin Sens. 1B SKIN SENSITISATION - Category 1B
- STOT RE 1 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
- STOT RE 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
- STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

History

- Date of issue/ Date of revision** : 28 April 2025
- Date of previous issue** : 20 November 2024
- Prepared by** : EHS
- Version** : 1.06

Disclaimer

Code : 000001099868

Date of issue/Date of revision : 28 April 2025

SIGMADUR 450E RESIN LIEBHERR YELLOW

SECTION 16: Other information

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by us, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.