

Safety data sheet according to Regulation (EC) No 1907/2006, Article 31

Printing date 01.04.2026

Version number 2

Revision: 26.03.2026

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

· **1.1 Product identifier**

· **Trade name: Hardener for surgical models**

· **Product Specification Number + Product Code: 4548H**

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

No further relevant information available.

· **Application of the substance / the mixture** Hardener liquid

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

frasaco GmbH
Oberhofer Strasse 18
88069 Tettnang
Tel.: +49(0)7542-9315-0
Fax: +49(0)7542-9315-15
E-Mail: info@frasaco.com

· **Informing department:**

Domestic Sales
Tel.: +49(0)7542-9315-44
Export Department
Tel.: +49(0)7542-9315-23

· **1.4 Emergency telephone number:**

Tel.: +49(0)7542-9315-0
E-Mail: info@frasaco.de

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Resp. Sens. 1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2	H351 Suspected of causing cancer.
STOT RE 2	H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.
Asp. Tox. 1	H304 May be fatal if swallowed and enters airways.



GHS09 environment

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

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GHS07

Acute Tox. 4	H332 Harmful if inhaled.
Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2	H319 Causes serious eye irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction.
STOT SE 3	H335 May cause respiratory irritation.

2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS07 GHS08 GHS09

· **Signal word** Danger

· Hazard-determining components of labelling:

diphenylmethane-4,4'-di-isocyanate

Bis(isopropyl)naphthalene

· Hazard statements

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

· Additional information:

EUH204 Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable· **vPvB:** Not applicable

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- **Determination of endocrine-disrupting properties**

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**

- **Description:** Mixture of the substances listed below including additives not requiring identification.

- **Dangerous components:**

CAS: 101-68-8 EINECS: 202-966-0 Index number: 615-005-00-9 Reg.nr.: 01-2119457014-47-X	diphenylmethane-4,4'-diisocyanate ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335, EUH204 Specific concentration limits: Eye Irrit. 2; H319: C ≥ 5 % Skin Irrit. 2; H315: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0.1 % STOT SE 3; H335: C ≥ 5 %	50 - 100%
CAS: 38640-62-9 EINECS: 254-052-6 Reg.nr.: 01-2119565150-48-X	Bis(isopropyl)naphthalene ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 1, H410	25 - 50%

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information**

Instantly remove any clothing contaminated by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation**

Call a doctor immediately.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness bring patient into stable side position for transport.

- **After skin contact**

Call a doctor immediately.

Immediately rinse with plenty of water.

In case of skin irritations or sensitizing effects, consult doctor.

- **After eye contact**

Rinse opened eye for several minutes under running water. Then consult doctor.

In case of permanent aches and pains please go and see the doctor.

Remove contact lenses if possible.

- **After swallowing** Do not induce vomiting; instantly call for medical help.

- **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

- **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Extinguishing powder, foam or water jet. Fight larger fires with water jet or alcohol-resistant foam.
 - **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
 - **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Carbon monoxide (CO)
Nitrogen oxides (NOx)
Hydrogen cyanide (HCN)
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
In case of fire wear breathing equipment being independent of ambient air and suit provided full protection against chemicals.
Do not inhale explosion gases or combustion gases.
 - **Additional information**
Cool endangered containers with water spray.
Remove goods in stock from incendiary zone, if possible.
Collect contaminated fire fighting water separately. It must not enter drains. Provide sufficient fire fighting water retention.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
-

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Do not inhale vapours.
Avoid contact with the product.
 - **6.2 Environmental precautions:**
Inform respective authorities in case product reaches water or sewage system.
Do not allow to enter drainage system, surface or ground water.
 - **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, universal binders) and disposal in suitable containers.
Ensure adequate ventilation.
 - **6.4 Reference to other sections**
Fill in suitable containers after approx. 1 hour; do not close (release of CO₂) but only cover. Leave containers outside for 7 - 14 days, afterwards dispose according to regulations.
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Don't eat, drink or smoke while working.
Avoid contact with eyes, skin and clothes.
Do not inhale gases/vapours/aerosols.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.

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- **Information about protection against explosions and fires:**
Fumes can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Ensure sufficient ventilation.
Store only in the original container.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in cool, dry conditions in well sealed containers.
The material tends to crystallisation at temperatures below 20°C. This can be reversed by heating to 40-50°C for several hours. Melting is possible several times without loss of quality.
Protect from humidity and keep away from water.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace:

101-68-8 diphenylmethane-4,4'-di-isocyanate

BOELV (European Union)	Short-term value: 0.012 (0.020)* mg/m ³ Long-term value: 0.006 (0.010)* mg/m ³ as -NCO *until 31.12.2028
WEL (Great Britain)	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO

DNELs

101-68-8 diphenylmethane-4,4'-di-isocyanate

Inhalative	DNEL (worker, short-term, local)	0.1 mg/m ³ (human)
	DNEL (worker, long-term, local)	0.05 mg/m ³ (human)
	DNEL (consumer, short-term, local)	0.05 mg/m ³ (human)
	DNEL (consumer, long-term, local)	0.025 mg/m ³ (human)

PNECs

101-68-8 diphenylmethane-4,4'-di-isocyanate

PNEC aqua (fresh water)	1 mg/L (.)
PNEC Water (marine water)	0.1 mg/L (.)
PNEC STP - Sewage Treatment Plant	1 mg/L (.)
PNEC soil	1 mg/kg soil dw (.)
PNEC Water (sporadic release)	10 mg/L (.)

Ingredients with biological limit values:

101-68-8 diphenylmethane-4,4'-di-isocyanate

BMGV (Great Britain)	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period od exposure Parameter: isocyanate-derived diamine
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- **Additional information:** The lists that were valid during the compilation were used as basis.

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· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

· General protective and hygienic measures

- Keep away from foodstuffs, beverages and food.
- Take off all contaminated clothing immediately.
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes and skin.
- Do not inhale gases / fumes / aerosols.
- Wash contaminated clothing before re-use.

· Breathing equipment:

- Use breathing protection in case of insufficient ventilation.
- In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
- Filter A/P2.

· Hand protection



Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Recommended thickness of the material: ≥ 0.33 mm

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 16523-1:2015: Level 6).

· For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

Nitrile rubber, NBR

· Eye/face protection



Safety glasses

· Body protection: Light weight protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

- Colour: Light yellow
- Odour: Characteristic

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
 - **Information on the shelf life** The product is stable.
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
 - Reacts with alcohols, amines, aqueous acids and alkalis
 - Reacts with water by forming of carbon dioxide. Danger of cracking by pressure buildup when containers closed.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
 - None in case of intended use and storage in compliance with instructions.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity**
Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**

101-68-8 diphenylmethane-4,4'-di-isocyanate		
Oral	LD50	>7,616 mg/kg (Rat) (OECD 401)
Dermal	LD50	>9,400 mg/kg (rabbit) (OECD 402)
38640-62-9 Bis(isopropyl)naphthalene		
Oral	LD50	>4,000 mg/kg (Rat)
Dermal	LD50	>4,000 mg/kg (Rat)
Inhalative	LC50	>5.6 mg/l/4h (Rat) (OECD 403)

· **Specific symptoms in biological assay:**

A long-term inhalation study over 2 years with rats using mechanically generated, breathable aerosols (aerodynamic diameter 95% below 5 µm) of polymeric MDI (PMDI) and concentrations of 0.2, 1.0 and 6.0 mg PMDI/m³ resulted in an elevated number of lung tumors, permanent inflammatory transformation of the nose, respiratory system and lungs, as well as yellowish deposits in the respiratory systems and lungs in the group of animals with highest exposure concentration. Animals within the group of 1.0 mg/m³ showed slight irritations and inflammatory transformation of the nose, respiratory system and lungs, but no lung tumors and/or deposits. Animals of the 0.2 mg/m³ group showed no irritations; this concentration was identified as "no effect level".

· **Primary irritant effect:**

· **Skin corrosion/irritation**

Causes skin irritation.

· **Serious eye damage/irritation**

Causes serious eye irritation.

· **Respiratory or skin sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

· **Carcinogenicity**

Suspected of causing cancer.

- **Reproductive toxicity** Based on available data, the classification criteria are not met.

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- **STOT-single exposure**
May cause respiratory irritation.
- **STOT-repeated exposure**
May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Aspiration hazard**
May be fatal if swallowed and enters airways.
- **Additional toxicological information:**
 - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Carc. 2
- **11.2 Information on other hazards**

· Endocrine disrupting properties
None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

· Aquatic toxicity:
101-68-8 diphenylmethane-4,4'-di-isocyanate
EC50 (static) >1,000 mg/l/24h (Daphnia magna) (OECD 202)
EC50 (static) >1,640 mg/l/72h (Desmodesmus subspicatus) (OECD 201)
LC0 (static) >3,000 mg/l/96h (Oryzias latipes)
38640-62-9 Bis(isopropyl)naphthalene
EC50 1.7 mg/l/48h (Daphnia magna) (OECD 202)
EC0 0.16 mg/l/48h (Daphnia magna)
EC0 0.15 mg/l/72h (algae) (OECD 201)
EC0 0.5 mg/l/96h (fish) (OECD 203)
NOEC (21d) 0.013 mg/l (Daphnia magna) (OECD 202)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable
- **vPvB:** Not applicable

- **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

- **12.7 Other adverse effects**

- **Additional ecological information:**

- **General notes:**

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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The waste code numbers mentioned are recommendations based on the probable use of the product.

· European waste catalogue	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 04 00	wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances
HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP7	Carcinogenic
HP13	Sensitising
HP14	Ecotoxic

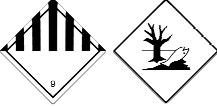
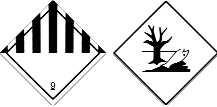
· **Uncleaned packagings:**

· **Recommendation:**

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

Packaging can be reused or recycled after cleaning.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR/RID, IMDG, IATA	UN3082
· 14.2 UN proper shipping name · ADR/RID, IATA · IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bis(isopropyl)naphthalene) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bis(isopropyl)naphthalene), MARINE POLLUTANT
· 14.3 Transport hazard class(es) · ADR/RID 	
· Class · Label	9 (M6) Miscellaneous dangerous substances and articles. 9
· IMDG, IATA 	
· Class · Label	9 Miscellaneous dangerous substances and articles. 9

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· 14.4 Packing group · ADR/RID, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR/RID): · Special marking (IATA):	Product contains environmentally hazardous substances: Bis(isopropyl)naphthalene Yes Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user · Kemler Number: · EMS Number: · Stowage Category	Warning: Miscellaneous dangerous substances and articles. 90 F-A,S-F A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable
· Transport/Additional information:	
· ADR/RID · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 3
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BIS(ISOPROPYL) NAPHTHALENE), 9, III

SECTION 15: Regulatory information· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category** E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 56a, 74

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

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· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **National regulations**

· **Information about limitation of use:**

- Employment restrictions concerning young persons must be observed.
- Employment restrictions concerning pregnant and lactating women must be observed.
- Employment restrictions concerning women of child-bearing age must be observed.

· **Water hazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is contained.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

This data sheet takes into account the labelling requirements of Regulation (EU) 2024/2564 adapting Regulation (EC) No 1272/2008 (22nd ATP of the CLP Regulation).

· **Relevant phrases**

- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- 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.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.
- EUH204 Contains isocyanates. May produce an allergic reaction.

· **Department issuing data specification sheet:**



This Safety Data Sheet has been drawn up in cooperation with:
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· **Date of previous version:** 27.07.2017

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

 EU

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

· **1.1 Product identifier**

- **Trade name: Resin for surgical models**
- **Product Specification Number + Product Code: 4548**

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

- No further relevant information available.
- **Application of the substance / the mixture** Resin

· **1.3 Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**
frasaco GmbH
Oberhofer Strasse 18
88069 Tettnang
Tel.: +49(0)7542-9315-0
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E-Mail: info@frasaco.com

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Tel.: +49(0)7542-9315-44
Export Department
Tel.: +49(0)7542-9315-23

· **1.4 Emergency telephone number:**

- Tel.: +49(0)7542-9315-0
E-Mail: info@frasaco.de

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

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Hazard pictograms


GHS07 GHS08

Signal word Warning

Hazard-determining components of labelling:

1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate

Hazard statements

H319 Causes serious eye irritation.

H361 Suspected of damaging fertility or the unborn child.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

P308+P313 IF exposed or concerned: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable

vPvB: Not applicable

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

6846-50-0 | 1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate

List II

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: Modified Polyolformulation

Dangerous components:

CAS: 6846-50-0 EINECS: 229-934-9 Reg.nr.: 01-2119451093-47-X	1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate ⚠ Repr. 2, H361; Aquatic Chronic 3, H412	≥ 10 - < 25%
CAS: 25214-63-5 NLP: 500-035-6 Reg.nr.: 01-2119471485-32-X	Ethylenediamine, propoxylated ⚠ Eye Irrit. 2, H319	10 - 25%

Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information

If symptoms occur or in case of doubt consult a doctor.

Personal protection for the First Aider.

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- **After inhalation**
Supply fresh air; consult doctor in case of symptoms.
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact**
Rinse opened eye for several minutes under running water. Then consult doctor.
Remove contact lenses if possible.
- **After swallowing** Do not induce vomiting; instantly call for medical help.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Extinguishing powder, foam or water jet. Fight larger fires with water jet or alcohol-resistant foam.
 - **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire:
Carbon monoxide (CO)
Nitrogen oxides (NOx)
Thick dark smoke occurs in case of fire.
- **5.3 Advice for firefighters**
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains. Provide sufficient fire fighting water retention.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Wear protective clothing.
- **6.2 Environmental precautions:**
Inform respective authorities in case product reaches water or sewage system.
Do not allow to enter drainage system, surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

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SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

No special measures required.

· **Information about protection against explosions and fires:** No special measures required.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage

· **Requirements to be met by storerooms and containers:** Store in cool location.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidising agents.

Do not store together with alkalis (caustic solutions).

· **Further information about storage conditions:**

Storage between 15 and 30 °C.

Store in cool, dry conditions in a well ventilated area.

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures should be adhered to general rules for handling chemicals.

· **Breathing equipment:** Not required

· **Hand protection**



Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Recommended thickness of the material: ≥ 0.2 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes

(Permeation according to EN 16523-1:2015: Level 6).

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**
Nitrile rubber, NBR
 - **Eye/face protection** Safety glasses recommended during refilling.
 - **Body protection:** Light weight protective clothing
-

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

- | | |
|---|-----------------------------------|
| · Colour: | White |
| · Odour: | Weak, characteristic |
| · Melting point/freezing point: | Not determined |
| · Boiling point or initial boiling point and boiling range | > 250 °C (DIN 53171) |
| · Flash point: | > 100 °C (c.c.) |
| · Auto-ignition temperature: | > 300 °C (DIN 51794) |
| · SADT | |
| · Viscosity: | |
| · dynamic at 20 °C: | 300 mPas (ISO 9371) |
| · Solubility | |
| · Water: | Not miscible or difficult to mix |
| · Partition coefficient n-octanol/water (log value) | Not determined |
| · Vapour pressure at 20 °C: | < 1 hPa |
| · Density and/or relative density | |
| · Density at 20 °C | 1.01 g/cm ³ (ISO 2811) |

· 9.2 Other information

- | | |
|--|------------------------------|
| · Appearance: | |
| · Form: | Fluid |
| · Important information on protection of health and environment, and on safety. | |
| · Self-inflammability: | Product is not selfigniting. |
| · Explosive properties: | Product is not explosive. |
| · Solvent content: | |
| · Organic solvents: | 0.0 % |
| · VOC EU | 0.0 g/l |
| · VOC EU | 0.00 % |

· Information with regard to physical hazard classes

- | | |
|--|------|
| · Explosives | Void |
| · Flammable gases | Void |
| · Aerosols | Void |
| · Oxidising gases | Void |
| · Gases under pressure | Void |
| · Flammable liquids | Void |
| · Flammable solids | Void |
| · Self-reactive substances and mixtures | Void |
| · Pyrophoric liquids | Void |
| · Pyrophoric solids | Void |

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· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
 - **10.2 Chemical stability**
 - **Information on the shelf life** The product is stable.
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
 - **10.3 Possibility of hazardous reactions** No dangerous reactions known
 - **10.4 Conditions to avoid** No further relevant information available.
 - **10.5 Incompatible materials:** Oxidizing agents.
 - **10.6 Hazardous decomposition products:**
None in case of intended use and storage in compliance with instructions.
-

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity** Based on available data, the classification criteria are not met.
 - **Primary irritant effect:**
 - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
 - **Serious eye damage/irritation**
Causes serious eye irritation.
 - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
 - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
 - **Carcinogenicity** Based on available data, the classification criteria are not met.
 - **Reproductive toxicity**
Suspected of damaging fertility or the unborn child.
 - **STOT-single exposure** Based on available data, the classification criteria are not met.
 - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
 - **Aspiration hazard** Based on available data, the classification criteria are not met.
 - **Additional toxicological information:**
 - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Repr. 2
- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

6846-50-0 | 1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate

List II

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SECTION 12: Ecological information· **12.1 Toxicity**· **Aquatic toxicity:****6846-50-0 1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate**

EC50 1.46 mg/l/48h (Daphnia magna)

LC50 6 mg/l/96h (fish)

· **12.2 Persistence and degradability** No further relevant information available.· **12.3 Bioaccumulative potential** No further relevant information available.· **12.4 Mobility in soil** No further relevant information available.· **12.5 Results of PBT and vPvB assessment**· **PBT:** Not applicable· **vPvB:** Not applicable· **12.6 Endocrine disrupting properties** For information on endocrine disrupting properties see section 11.· **12.7 Other adverse effects**· **Additional ecological information:**· **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

SECTION 13: Disposal considerations· **13.1 Waste treatment methods**· **Recommendation**

Smaller quantities can be disposed with household waste.

The waste code numbers mentioned are recommendations based on the probable use of the product.

· **European waste catalogue**

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 04 00	wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances
HP4	Irritant - skin irritation and eye damage
HP10	Toxic for reproduction

· **Uncleaned packagings:**· **Recommendation:**

Packaging can be reused or recycled after cleaning.

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

SECTION 14: Transport information· **14.1 UN number or ID number**· **ADR/RID, ADN, IMDG, IATA** Void· **14.2 UN proper shipping name**· **ADR/RID, ADN, IMDG, IATA** Void

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· 14.3 Transport hazard class(es)	
· ADR/RID, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR/RID, IMDG, IATA	Void
· 14.5 Environmental hazards:	Not applicable
· 14.6 Special precautions for user	Not applicable
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I** None of the ingredients is listed.· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **National regulations**· **Water hazard class:**· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is contained.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

This data sheet takes into account the labelling requirements of Regulation (EU) 2024/2564 adapting Regulation (EC) No 1272/2008 (22nd ATP of the CLP Regulation).

- **Relevant phrases**

- H319 Causes serious eye irritation.

- H361 Suspected of damaging fertility or the unborn child.

- H412 Harmful to aquatic life with long lasting effects.

- **Department issuing data specification sheet:**



This Safety Data Sheet has been drawn up in cooperation with:

DEKRA Assurance Services GmbH, Hanomagstr. 12, D-30449 Hanover, Germany,

phone: (+49) 511 42079 - 0, reach@dekra.com.

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- **Date of previous version:** 26.07.2017

- **Version number of previous version:** 2

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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

· **1.1 Product identifier**

- **Trade name: Filler for surgical models**
- **Product Specification Number + Product Code: 4550**

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

No further relevant information available.

- **Application of the substance / the mixture** Filler/ Extender

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

frasaco GmbH
Oberhofer Strasse 18
88069 Tettnang
Tel.: +49(0)7542-9315-0
Fax: +49(0)7542-9315-15
E-Mail: info@frasaco.com

· **Informing department:**

Domestic Sales
Tel.: +49(0)7542-9315-44
Export Department
Tel.: +49(0)7542-9315-23

· **1.4 Emergency telephone number:**

Tel.: +49(0)7542-9315-0
E-Mail: info@frasaco.de

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The product is not classified, according to the CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable
- **vPvB:** Not applicable

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- **Determination of endocrine-disrupting properties**
The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
 - **Description:** Mixture of the substances listed below including additives not requiring identification.
 - **Dangerous components:** Void
 - **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
 - **General information** No special measures required.
 - **After inhalation** Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact**
Wash with water and soap.
The product is not skin irritating.
 - **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
 - **After swallowing**
In case of persistent symptoms consult doctor.
Do not induce vomiting.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Use fire fighting measures that suit the environment.
The product itself does not burn.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
 - **Protective equipment:** No special measures required.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains. Provide sufficient fire fighting water retention.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**
Collect mechanically.
Dispose of the material collected according to regulations.

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- **6.4 Reference to other sections** No dangerous materials are released.
-

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
 - **Information about protection against explosions and fires:** No special measures required.
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store in cool location.
 - **Information about storage in one common storage facility:** Store away from foodstuffs.
 - **Further information about storage conditions:** Store at dry and cool places.
 - **7.3 Specific end use(s)** No further relevant information available.
-

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
 - WEL: workplace exposure limit
 - OEL: Occupational Exposure Limit

60676-86-0 Silica, vitreous	
WEL (Great Britain)	Long-term value: 0.08 mg/m ³ fused respirable dust

- **Additional information:** The lists that were valid during the compilation were used as basis.

- **8.2 Exposure controls**
 - **Individual protection measures, such as personal protective equipment**
 - **General protective and hygienic measures**
 - The usual precautionary measures should be adhered to general rules for handling chemicals.
 - **Breathing equipment:** Not required
 - **Hand protection**
 - Protective gloves are only required in case of intense and/or prolonged skin contact with the product.
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
 - **Material of gloves**
 - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
 - **Penetration time of glove material**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - With solid dry substances permeation is not to be expected. Therefore the breakthrough-time for this protective glove has not been measured.
 - **Eye/face protection** Safety glasses recommended during refilling.
 - **Body protection:** Light weight protective clothing

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Colour:	White
· Odour:	Weak, characteristic
· Melting point/freezing point:	Not determined
· Boiling point or initial boiling point and boiling range	> 200 °C (DIN 53171)
· Flash point:	> 110 °C (c.c.)
· SADT	
· Solubility	
· Water:	Dispersible
· Partition coefficient n-octanol/water (log value)	Not determined
· Density and/or relative density	
· Density at 20 °C	0.2 g/cm ³ (ISO 2811)
· Particle characteristics	See section 3.

· 9.2 Other information

· Appearance:	
· Form:	Pasty
· Important information on protection of health and environment, and on safety.	
· Self-flammability:	Product is not selfigniting.
· Explosive properties:	Product is not explosive.
· Solvent content:	
· Organic solvents:	0.0 %

· Information with regard to physical hazard classes

· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.

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- **10.2 Chemical stability**
 - **Information on the shelf life** The product is stable.
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
 - **10.3 Possibility of hazardous reactions** No dangerous reactions known
 - **10.4 Conditions to avoid** No further relevant information available.
 - **10.5 Incompatible materials:** No further relevant information available.
 - **10.6 Hazardous decomposition products:**
None in case of intended use and storage in compliance with instructions.
-

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity** Based on available data, the classification criteria are not met.
 - **Primary irritant effect:**
 - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
 - **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
 - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
 - **Germ cell 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.
 - **STOT-single exposure** Based on available data, the classification criteria are not met.
 - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
 - **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

· Endocrine disrupting properties
None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
 - **12.2 Persistence and degradability** No further relevant information available.
 - **12.3 Bioaccumulative potential** No further relevant information available.
 - **12.4 Mobility in soil** No further relevant information available.
 - **12.5 Results of PBT and vPvB assessment**
 - **PBT:** Not applicable
 - **vPvB:** Not applicable
 - **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
 - **12.7 Other adverse effects**
 - **Additional ecological information:**
 - **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
-

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
Smaller quantities can be disposed with household waste.

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The waste code numbers mentioned are recommendations based on the probable use of the product.

· European waste catalogue	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 04 00	wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09

· **Uncleaned packagings:**

· **Recommendation:**

Packaging can be reused or recycled after cleaning.

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR/RID, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR/RID, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR/RID, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR/RID, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

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- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

- **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

- **National regulations**

- **Water hazard class:**

- **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is contained.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

This data sheet takes into account the labelling requirements of Regulation (EU) 2024/2564 adapting Regulation (EC) No 1272/2008 (22nd ATP of the CLP Regulation).

- **Department issuing data specification sheet:**



This Safety Data Sheet has been drawn up in cooperation with:
 DEKRA Assurance Services GmbH, Hanomagstr. 12, D-30449 Hanover, Germany,
 phone: (+49) 511 42079 - 0, reach@dekra.com.

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- **Date of previous version:** 25.07.2017

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

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

· **1.1 Product identifier**

· **Trade name: A-J F R X-ray colour**

· **Product Specification Number + Product Code:** 4470; 4549

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

No further relevant information available.

· **Application of the substance / the mixture** Paint

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

frasaco GmbH
Oberhofer Strasse 18
88069 Tettnang
Tel.: +49(0)7542-9315-0
Fax: +49(0)7542-9315-15
E-Mail: info@frasaco.com

· **Informing department:**

Domestic Sales
Tel.: +49(0)7542-9315-44
Export Department
Tel.: +49(0)7542-9315-23

· **1.4 Emergency telephone number:**

Tel.: +49(0)7542-9315-0
E-Mail: info@frasaco.de

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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GHS07

Skin Irrit. 2 H315 Causes skin irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.
 STOT SE 3 H336 May cause drowsiness or dizziness.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02 GHS05 GHS07 GHS09

Signal word Danger

Hazard-determining components of labelling:

butan-1-ol
 n-butyl acetate
 Dipentene
 Fatty acids, C14-18 and C16-18-unsatd., maleated

Hazard statements

H226 Flammable liquid and vapour.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H336 May cause drowsiness or dizziness.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing mist/vapours/spray.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Labelling of packages where the contents do not exceed 125 ml

Hazard pictograms



GHS02 GHS05 GHS07 GHS09

Signal word Danger

Hazard-determining components of labelling:

butan-1-ol

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n-butyl acetate
Dipentene
Fatty acids, C14-18 and C16-18-unsatd., maleated

Hazard statements

H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements

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

P310 Immediately call a POISON CENTER/doctor.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3 Other hazards**Results of PBT and vPvB assessment**

· **PBT:** Not applicable

· **vPvB:** Not applicable

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

· **Description:** Alcoholic solution.

Dangerous components:

CAS: 123-86-4 EINECS: 204-658-1 Index number: 607-025-00-1 Reg.nr.: 01-2119485493-29-X	n-butyl acetate ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336, EUH066	25 - 50%
CAS: 71-36-3 EINECS: 200-751-6 Index number: 603-004-00-6 Reg.nr.: 01-2119484630-38-X	butan-1-ol ⚠ Flam. Liq. 3, H226; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	≥ 3 - < 10%
CAS: 1330-20-7 EINECS: 215-535-7 Index number: 601-022-00-9 Reg.nr.: 01-2119488216-32-X	xylene, mixed isomers, pure ⚠ Flam. Liq. 3, H226; ⚠ STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335; Aquatic Chronic 3, H412	≥ 2.5 - < 10%
CAS: 138-86-3 EINECS: 205-341-0 Index number: 601-029-00-7 Reg.nr.: 01-2120766421-57-X	Dipentene ⚠ Flam. Liq. 3, H226; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	≥ 2.5 - < 10%
CAS: 100-41-4 EINECS: 202-849-4 Index number: 601-023-00-4 Reg.nr.: 05-2116469901-38-X	Ethylbenzene ⚠ Flam. Liq. 2, H225; ⚠ STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Acute Tox. 4, H332	< 2.5%
CAS: 85711-46-2 EINECS: 288-306-2	Fatty acids, C14-18 and C16-18-unsatd., maleated ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317	≥ 0.1 - < 1%

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
 - **General information**
If symptoms occur or in case of doubt consult a doctor.
Personal protection for the First Aider.
 - **After inhalation**
In case of unconsciousness bring patient into stable side position for transport.
In case of unsteady breathing or breathing arrest induce artificial respiration.
Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
In case of skin irritations or sensitizing effects, consult doctor.
 - **After eye contact**
Remove contact lenses if possible.
Keep eye lids open and rinse them with ample amounts of clean running water for at least 15 minutes.
In case of permanent aches and pains please go and see the doctor.
 - **After swallowing** Drink copious amounts of water and provide fresh air. Instantly call for doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Extinguishing powder, foam or water jet. Fight larger fires with water jet or alcohol-resistant foam.
 - **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire:
Carbon monoxide (CO)
- **5.3 Advice for firefighters**
 - **Protective equipment:** Wear self-contained breathing apparatus.
 - **Additional information**
Cool endangered containers with water spray.
Remove goods in stock from incendiary zone, if possible.
Collect contaminated fire fighting water separately. It must not enter drains. Provide sufficient fire fighting water retention.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources
Use breathing protection against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow to enter the ground/soil.
Do not allow to enter drainage system, surface or ground water.

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- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Ensure adequate ventilation.
 - **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
-

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Avoid the formation of inflammable and explosive solvent vapours in the air and prevent the maximum workplace concentration values from being exceeded.
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** Store only in the original container.
 - **Information about storage in one common storage facility:**
Keep away from strong oxidizing, alkalis and acidic materials.
 - **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
Store container in a well ventilated position.
Protect from heat and direct sunlight.
 - **7.3 Specific end use(s)** No further relevant information available.
-

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
WEL: workplace exposure limit
OEL: Occupational Exposure Limit

123-86-4 n-butyl acetate	
IOELV (European Union)	Short-term value: 723 mg/m ³ , 150 ppm Long-term value: 241 mg/m ³ , 50 ppm
WEL (Great Britain)	Short-term value: 966 mg/m ³ , 200 ppm Long-term value: 724 mg/m ³ , 150 ppm
7727-43-7 barium sulphate, natural	
WEL (Great Britain)	Long-term value: 10* 4** mg/m ³ *inhalable dust **respirable dust
71-36-3 butan-1-ol	
WEL (Great Britain)	Short-term value: 154 mg/m ³ , 50 ppm Sk
1330-20-7 xylene, mixed isomers, pure	
IOELV (European Union)	Short-term value: 442 mg/m ³ , 100 ppm Long-term value: 221 mg/m ³ , 50 ppm Skin

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WEL (Great Britain)	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk; BMGV
100-41-4 Ethylbenzene	
IOELV (European Union)	Short-term value: 884 mg/m ³ , 200 ppm Long-term value: 442 mg/m ³ , 100 ppm Skin
WEL (Great Britain)	Short-term value: 552 mg/m ³ , 125 ppm Long-term value: 441 mg/m ³ , 100 ppm Sk
· Ingredients with biological limit values:	
1330-20-7 xylene, mixed isomers, pure	
BMGV (Great Britain)	650 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: methyl hippuric acid

· **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

· General protective and hygienic measures

Wash hands during breaks and at the end of the work.

Keep away from foodstuffs, beverages and food.

· Breathing equipment:

Breathing apparatus approved for this purpose should be worn when solvent concentration exceeds the maximum workplace concentration values.

Filter Type A.

Not necessary if room is well-ventilated.

· Hand protection



Use gloves of stable material (i.e. nitril rubber).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

In case of a layer thickness of 0.4 mm the penetration time is longer than 30 minutes.

· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Nitrile rubber, NBR

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· **Eye/face protection**

Tightly sealed safety glasses.

· **Body protection:** Solvent resistant protective clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**

· Colour:	Red
· Odour:	Not distinguishable
· Odour threshold:	Not determined
· Melting point/freezing point:	Not determined
· Boiling point or initial boiling point and boiling range	ca. 117 °C
· Lower and upper explosion limit	
· Lower:	1 Vol %
· Upper:	11.2 Vol %
· Flash point:	ca. 27 °C
· Auto-ignition temperature:	ca. 255 °C
· Decomposition temperature:	Not determined
· SADT	
· pH	Not applicable
· Viscosity:	
· Kinematic viscosity	Not determined
· dynamic:	Not determined
· Solubility	
· Water:	Insoluble
· Partition coefficient n-octanol/water (log value)	Not determined
· Vapour pressure at 20 °C:	ca. 8.6 hPa
· Density and/or relative density	
· Density	Not determined
· Relative density	Not determined
· Vapour density	Not determined

· **9.2 Other information**· **Appearance:**· **Form:** Fluid· **Important information on protection of health and environment, and on safety.**· **Explosive properties:** Product is not explosive.· **Solvent content:**

· Organic solvents:	66.7 %
· VOC EU	840.3 g/l
· VOC EU	63.10 %
· Water:	0.0 %
· Solids content:	11.0 %

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· Change in condition	
· Evaporation rate	Not determined
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Flammable liquid and vapour.
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	No statement can be made on this point due to a lack of studies on the product.
	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
 - **Information on the shelf life** The product is stable.
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** Avoid contact with strong oxidizing agents.
- **10.6 Hazardous decomposition products:**
None in case of intended use and storage in compliance with instructions.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

138-86-3 Dipentene

Oral	LD50	5,000 mg/kg (Rat)
Dermal	LD50	5,000 mg/kg (rabbit)

- **Primary irritant effect:**
 - **Skin corrosion/irritation**
Causes skin irritation.

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- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Germ cell 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.
- **STOT-single exposure**
May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

· Endocrine disrupting properties
None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:
138-86-3 Dipentene
EC50 17 mg/l/48h (Daphnia magna)
LC50 38.5 mg/l/96h (Pimephales promelas)

- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** There are no data available about the preparation.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable

- **vPvB:** Not applicable

- **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

- **12.7 Other adverse effects**

- **Additional ecological information:**

- **General notes:**

The product does not contain organically bounded halogens (AOX-free).

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

The waste code numbers mentioned are recommendations based on the probable use of the product.

· European waste catalogue
08 00 00 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS

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08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP14	Ecotoxic

· **Uncleaned packagings:**

· **Recommendation:**

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.
Cleaned packing materials have to be admitted to local recycling circuits.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR/RID, IMDG, IATA	UN1263
· 14.2 UN proper shipping name · ADR/RID · IMDG · IATA	PAINT mixture, ENVIRONMENTALLY HAZARDOUS PAINT mixture, MARINE POLLUTANT PAINT mixture
· 14.3 Transport hazard class(es) · ADR/RID	
 	
· Class · Label	3 (F1) Flammable liquids. 3
· IMDG	
 	
· Class · Label	3 Flammable liquids. 3
· IATA	
	
· Class · Label	3 Flammable liquids. 3
· 14.4 Packing group · ADR/RID, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant:	Symbol (fish and tree)

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· Special marking (ADR/RID):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Kemler Number:	30
· EMS Number:	F-E,S-E
· Stowage Category	A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable
· Transport/Additional information:	
· ADR/RID	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1263 PAINT MIXTURE, 3, III, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I** None of the ingredients is listed.· **Seveso category**

E2 Hazardous to the Aquatic Environment

P5c FLAMMABLE LIQUIDS

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

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· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

· National regulations
· Information about limitation of use:

Employment restrictions concerning young persons must be observed.

· Water hazard class: Water danger class 3 (Self-assessment): extremely hazardous for water.

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is contained.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information


These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This data sheet takes into account the labelling requirements of Regulation (EU) 2024/2564 adapting Regulation (EC) No 1272/2008 (22nd ATP of the CLP Regulation).

· Relevant phrases

- 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.
- 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.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- 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.
- H412 Harmful to aquatic life with long lasting effects.
- EUH066 Repeated exposure may cause skin dryness or cracking.

· Department issuing data specification sheet:

 **DEKRA** This Safety Data Sheet has been drawn up in cooperation with:
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· Date of previous version: 21.07.2017

· Version number of previous version: 2

· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

EU
