

EU – Safety Data Sheet



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Printing date: 09.05.2014

According to 1907/2006/EG, Article 31

Date of issue: 10.01.2014

Wax adhesive

1. Identification of the substance / Preparation and Company:

Identification of the substance or preparation:

Commercial product name: Wax adhesive

Company / Manufacturer: ERNST HINRICHS GmbH

Borsigstr. 1

D - 38644 Goslar

0 53 21 / 50 62 4

0 53 21 / 50 88 1

info@hinrichs-dental.de / www.hinrichs-dental.de

2. Composition / Information on Ingredients:

2.1 Chemical characterization:

Description: Solvent Mixture.

2.2 Dangerous components:

EINECS: 265-151-9	Aliphatic hydrocarbon mixture, predominantly in the range C6. Xn, Xi, F, N, R 11-38-51/53-65-67	> 50 %
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CAS: 110-54-3	n-hexane	2,5 - 10 %
EINECS: 203-777-6	Xn, Xi, F, N, R 11-38-48/20-62-51/53-65-67	

2.3 Additional information: Contains aliphatic hydrocarbon mixture: $\geq 30\%$

3. Hazards Identification:

3.1 Hazard description:



Xn - harmful to health

F - highly flammable

N - hazardous to the environment

3.2 Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

3.3 R 11

Highly flammable.

R 38

Irritating to skin.

R 51/53

Toxic to aquatic organisms, may cause long-term adverse effects.

R 65

Harmful: may cause lung damage if swallowed.

R 67

Vapours may cause drowsiness and dizziness.

3.4 Classification system: The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4. First aid measures:

4.1 General information:

Personal protection for the first aider.

Remove contaminated clothing immediately.

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

4.2 After inhalation:

Move affected person to fresh air and bring into a stable position. Supply fresh air; if necessary give mouth-to-mouth resuscitation and keep patient warm. If symptoms persist please seek medical advice.

In case of unconsciousness place patient stably in side position for transportation.



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- | | | |
|-----|--------------------------------|---|
| 4.3 | After skin contact: | Take off and remove contaminated clothing, also underwear, shoes and socks.
Immediately wash with water and soap and rinse thoroughly.
If irritating of the skin persists consult a doctor. |
| 4.4 | After eye contact: | Rinse open eye for several minutes under running water. If symptoms persist, consult an ophthalmologist. |
| 4.5 | After swallowing: | Do not induce vomiting.
Consult a doctor; do not administer milk or fatty oils.
If patient is lying on its back and vomiting please turn him onto his side.
If vomiting it is necessary to bring the patient into the head-down position (increased risk of aspiration or perforation). |
| 4.6 | Information for the doctor: | According to our knowledge, the toxicological properties of this product have not been thoroughly investigated. |
| 4.7 | Following symptoms can appear: | Irritation of eyes, skin and mucous membrane.
Irritation of the respiration tract.
Tiredness.
Drowsiness.
Narcosis.
Breathlessness.
Headache.
Dizziness.
Cramps.
Unconsciousness.
Sickness. |
| 4.8 | Risks: | We do not have any descriptions of possible more symptoms.
Prolonged or repeated skin contact may cause dermatitis due to the degreasing effect of the product.
Risk of aspiration into the lung after swallowing with following vomiting.
This can cause suffocation or a toxic pulmonary oedema.
Risk of circulatory collapse.
Risk of pneumonia.
Risk of respiratory disorder.
Risk of pulmonary oedema.
Central nervous system disorders. |
| 4.9 | Treatment: | Elementary help.
Symptomatic and supportive. |

5. Fire Fighting measures:

- | | | |
|-----|---|--|
| 5.1 | Suitable extinguishing agents: | CO ₂ , powder or water spray. Fight larger fires with water spray or alcohol resistant foam. |
| 5.2 | For safety reasons unsuitable extinguishing agents: | Water with full jet. |
| 5.3 | Special hazards caused by the material, its products of combustion or flue gases: | During heating or in case of fire formations of toxic gases are possible.
In case of fire carbon monoxide or carbon dioxide can be released. |
| 5.4 | Special protective equipment: | Wear self-contained breathing apparatus and protective clothing. |
| 5.5 | Additional information: | Collect contaminated fire fighting water separately; the product is not allowed to enter the canalisation.
Cool endangered containers with the water jet.
In case of fire container can explode.
Fire classification B: liquid or liquefying substances (DIN EN 2). |



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6. Accidental release measures:

- | | | |
|-----|--|---|
| 6.1 | Person-related safety precautions: | Keep persons away and stay on the windward side.
Use breathing apparatus. Wear protective equipment. Keep unprotected persons away. Keep away ignition sources. |
| 6.2 | Measures for environmental protection: | Provide adequate ventilation. Bring persons to a safe place.
Defeat gases / vapours / mist with a water jet.
Prevent entry into drains, pits and cellars.
Do not allow to enter sewers / surface water / ground water or ground.
In case of huge amounts entering the waters / drains or ground contact the responsible public authorities. |
| 6.3 | Measures for cleaning / collecting: | Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Secondary cleaning with water.
Use suitable containers for transporting the product to disposal or recycling.
Dispose contaminated material regarding to section 13. |

7. Handling and Storage:

- | | | |
|-----|--|--|
| 7.1 | Handling:
Information for safe handling: | Keep container tightly sealed.
Avoid formation of aerosol.
Ensure good ventilation / exhaustion at the workplace.
Ensure good room ventilation even at ground level (vapours are heavier than air).
Narrow the inventory level in the work.
Discharge waste air only over suitable separators.
Do not ventilate the waste air back into the workplace. |
| | Information about fire- and explosion protection: | Vapours may form an explosive mixture with air.
Keep ignition sources away – Do not smoke.
Protect against electrostatic charges.
Use only in explosion protected area.
Use only explosion protected equipments / fittings and non-sparking tools.
Ignitable mixtures can form in empty containers.
Temperature class (VDE 0165): T3
Maximum surface temperature of equipment: 200°C.
Ignition temperatures of the flammable materials: >200°C |
| 7.2 | Storage:
Requirements to be met by storerooms and containers: | Store in a cool location.
Preferably store in original container.
Provide Solvent-resistant and sealed floor.
Provide floor pan without drain.
Please notice the Technical Regulations for Combustible Liquids (TRbF) for general and construction requirements, the definition of explosion hazardous areas, and information on fire protection systems.
TRbF 20 applies to storages
TRbF 30 applies to filling and emptying points
TRbF 50 applies to pipelines
TRbF 60 applies to portable containers
Regarding to the directive for explosion protection following measures are required:
- Preventing the formation of an explosive atmosphere (concentration limit and monitoring, inertisation, leak tightness, |



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ventilation, alarm systems).
 - Preventing the ignition of an explosive atmosphere (Zoning, eliminating sources of ignition and explosion-proof electrical installation, grounding)
 - Constructive measures to limit the impact of an explosion (explosion-proof construction, explosion venting, explosion suppression)

Measures against static charges.

All parts which could get dangerous while charging should be grounded.

Use Explosion-proof electrical equipment, pumps, fittings, and valves.

Observe official regulations on storing packaging with pressurized containers.

7.3 Information about storing in one common storage facility:

Do not store with foods.

Do not store with products which could cause dangerous chemical reactions with this product.

See also section 10. Stability and Reactivity.

7.4 Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Store in a good ventilated place.

Keep product locked up and inaccessible for children.

7.5 Recommended storage temperature:

< +30°C

7.6 Storage class:

3A flammable liquids.

Vapour pressure at 50°C ≤ 300kPa [3bar] and

-flash point ≤ 55°C

- flash point between 21°C and 55°C - miscible with water according to TRbF 003.

R10, R11, R12

7.7 Classification:

Highly flammable.

8. Exposure controls / Personal protection:

Additional information about design of technical facilities: No further data; see item 7.

8.1 Ingredients with limit values that require monitoring at the workplace:

Aliphatic carbon hydride mixture, predominantly within the range C6.	
MAC	600 mg/m ³ , 170 ml/m ³ TRGS 900/901 group 5
110-54-3 n-Hexane	
MAC	180 mg/m ³ , 50 ml/m ³ Y; DFG

8.2 Additional information:

The lists valid during the making were used as basis.

8.3 Personal protective equipment: General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Immediately remove all soiled and contaminated clothing

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

During work do not eat, drink, smoke or snuff.

8.4 Respiratory protection:

Respiratory protection is not required for the use in closed systems or rooms with adequate ventilation.

It is required In case of insufficient ventilation.

In case of intensive or longer exposure use self-contained respiratory protective device.

Filter AX, brown, low-boiling organic compounds



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(boiling point $\leq 65^{\circ}\text{C}$)

These filters are for the single-use.

Maximum use concentration: 100 ml/m³ for a maximum of 40 minutes ; 500 ml/ m³ for a maximum of 20 minutes.

In case of higher exposure use self-contained respiratory protective device.

Take notice of the wearing time limits for the respiratory protective device.

8.5 Protection of hands:

Protective gloves for handling chemicals.

To avoid skin problems do not wear the gloves longer than necessary.

The glove material has to be impermeable and resistant to the product / the substance / the preparation.

Before using the gloves make sure they are intact.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Recommendation for preventive skin protection: use of skin protection products

8.6 Material of gloves:

Full contact:

Nitrile rubber gloves.

Recommended material thickness: $\geq 0,35$ mm

Gloves made of fluororubber.

Recommended material thickness: $\geq 0,70$ mm

Splatter contact:

Butyl rubber gloves.

Recommended material thickness: $\geq 0,70$ mm

The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Ask the manufacturer for the suitable material.

8.7 Penetration time of glove material:

Full contact:

Penetration time: > 480 minutes (8h).

Splatter contact:

Penetration time: $> 10 - < 30$ minutes.

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

The time specifications are guideline values.

Increased temperatures due to heated substances, body heat, etc. and a reduction of thickness due to stretching can lead to a reduction of the breakthrough time.

The penetration time depends on the layer thickness.

8.8 Glove materials which are not suitable:

Gloves made of leather.

Gloves made of thick material.

8.9 Eye protection:

Tightly sealed goggles.

Body protection:

Solvent-resistant protective clothing.

Antistatic protective clothing.

Flame retardant protective clothing.

Protective apron.

Boots.

Or a suitable chemical protective suit.

Body protection should be selected workplace specifically according to the concentration and amount of the hazardous materials.

The chemical resistance of the protection clothing should be requested from the supplier.



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9. Physical and chemical properties:

9.1 General information:

Form: Fluid
Colour: Colourless, clear
Odour: Characteristic

9.2 Change in condition:

Melting point / Melting range: < -20°C
Boiling point / Boiling range: ~ 54°C
Flash point: - 33°C
Ignition temperature: > 200°C
Danger of explosion: Product is not explosive. However, formations of explosive air/vapour mixtures are possible.

Explosion limits:
Lower: 1,1 Vol %
Upper: 7,4 Vol %
Vapour pressure at 20°C: 240 hPa
Density at 15°C: 0,658 - 0,670 g/cm³
Solubility in / miscibility with water at 20°C: < 1g/l
n-octanol-water partition coefficient: ~ 4 log POW

10. Stability and Reactivity:

- 10.1 Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. At normal pressure distillation is possible when undecomposed.
- 10.2 Dangerous reactions: Formations of explosive gases with air. Reactions with oxidising agents.
- 10.3 Dangerous decomposition products: Flammable gases / vapours. In case of fire following can be released: toxic gases / vapours carbon monoxide and carbon dioxide

11. Toxicological Information:

11.1 Acute toxicity:

LD/LC50 values relevant for classification:

Oral	LD50	> 2000 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rat)
Inhalativ	LC50/4 h	> 190 mg/l (rat)

11.2 Primary irritant effect:

On the skin: Irritant.
On the eye: Slightly irritant effect.
Sensitization: No sensitizing effects known.

11.3 Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful.
Irritant.
Further hazardous characteristics cannot be excluded.
The product should be handled with the usual care when working with chemicals.

12. Ecological Information:

12.1 Information about elimination (persistence and degradability):

General notes: The organic component is biodegradable.

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Mobility and bioaccumulation potential: Accumulation in organisms as a result of the n-octanol/water partition coefficient (log Pow >3) is possible.

Ecotoxic effect: The product is toxic to aquatic organisms.

Aquatic toxicity:

12.2 Aliphatic carbon hydride mixture, predominantly within the range C6.

EC50	>1 - <10 mg/l (DAPHNIA TOXICITY)
	>1 - <10 mg/l (ALGAE TOXICITY)
	>1 - <10 mg/l (BACTERIA TOXICITY)
EC50	>10- <100 mg/l (FISH TOXICITY)

12.3 General information: Toxic for water organisms.
Do not allow product to enter the ground water, waters, sewers or ground.
Water hazard class 1: slightly hazardous to water.

13. Disposal Considerations:

13.1 Product - Recommendation: Must not be disposed together with the household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

European Waste Catalogue:

07 00 00	WASTES FROM ORGANIC-CHEMICAL PROCESSES
07 01 00	Wastes from the manufacture, preparation, supply and application of organic basic chemicals.
07 01 04	Other organic solvents, suds and mother liquors.

13.2 Uncleaned packaging – Recommendation: Disposal must be made according to official regulations.
15 01 10 Packaging, which contains residues of hazardous substances or is contaminated with hazardous substances.

14. Transport Information:

Land transport ADR/RID (cross-border)



ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 33
UN-Number: 1208
Packaging group: II
Hazard label: 3
UN proper shipping name: 1208 HEXANE, solution

Maritime transport IMDG:



IMDG Class: 3
UN-Number: 1208
Label: 3
Packaging group: II
EMS-Number: F-E, S-D
Marine pollutant: No.
Proper shipping name: HEXANES, solution

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Air transport ICAO-TI and IATA-DGR:



ICAO/IATA-Class:	3
UN/ID-Number:	1208
Label:	3
Packaging group:	II
Proper shipping name:	HEXANES, solution

15. Regulatory Information:

15.1 Labelling according to EU guidelines: The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

15.2 Code letter and hazard designation of product:



Xn - harmful to health
F - highly flammable
N - hazardous to the environment

15.3 Hazard components for labelling: Aliphatic carbon hydride mixture, predominantly within the range C6.

15.4 R-phrases:

11	Highly flammable.
38	Irritating to skin.
51/53	Toxic to aquatic organisms, longer term damages in waters possible.
65	Harmful, may cause lung damages after swallowing.
67	Vapours may cause drowsiness and dizziness.

15.5 S-phrases:

9	Keep container in a well-ventilated place.
16	Keep away from sources of ignition – No smoking.
23	Do not breathe aerosol.
24	Avoid skin contact.
33	Take precautionary measures against static discharges.
61	Avoid release into the environment. Handle the product regarding to the special instructions of the material safety data sheet.
62	After swallowing do not induce vomiting. Seek immediately medical advice and show the packaging or label.

15.6 National regulations:

Restrictions of occupation: According to § 22 of the JArbSchG - Employment restrictions concerning young persons must be observed.
According to §§ 4 and 5 of the MuSchRiV Employment restrictions concerning pregnant and breastfeeding mothers must be observed.

Statutory order on hazardous incidents: Annex 1 - no. 9b
Harmful to the environment in connection with R51/53.
Quantity limits for operational areas according to section 1 paragraph 1.
- set 1: 500.000 kg
- set 2: 2.000.000 kg
Highly flammable.

Classification according to the Ordinance on Industrial Safety and Health:

Technical Instructions on Air Quality (TA Luft):
Class proportion in %:

Following values must not be exceeded:
Mass flow: 0, 50 kg/h or mass concentration: 50 mg/m³ each stated as total carbon.



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Chapter 5.2.5 organic substances,
exempt from pulverulent organic
substances (5.2.1):

Water hazard class:

S-phrase according to annex 7, index 22:0,1

1 - Slightly hazardous to waters.

16. Further Information:

This information is based on our present knowledge. However this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

16.1 Relevant R-phrases:

11	Highly flammable.
38	Irritating to skin.
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
51/53	Toxic to aquatic organisms, longer term damages in waters possible.
62	Possible risk of impaired fertility.
65	Harmful, may cause lung damages after swallowing.
67	Vapours may cause drowsiness and dizziness.

16.2 Abbreviations and acronyms:

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).
IMDG:	International Maritime Code for Dangerous Goods.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association".
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization".

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Wax adhesive thinner

1. Identification of the substance / Preparation and Company:

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Commercial product name: Wax adhesive thinner

Company / Manufacturer: ERNST HINRICHS GmbH

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2. Composition / Information on Ingredients:

2.1 Chemical characterization:

Description: Solvent Mixture.

2.2 Dangerous components:

EINECS: 265-151-9	Aliphatic hydrocarbon mixture, predominantly in the range C6. Xn, Xi, F, N, R 11-38-51/53-65-67	> 50 %
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CAS: 110-54-3	n-hexane	2,5 - 10 %
EINECS: 203-777-6	Xn, Xi, F, N, R 11-38-48/20-62-51/53-65-67	

2.3 Additional information: Contains aliphatic hydrocarbon mixture: $\geq 30\%$

3. Hazards Identification:

3.1 Hazard description:



Xn - harmful to health

F - highly flammable

N - hazardous to the environment

3.2 Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

3.3 R 11

Highly flammable.

R 38

Irritating to skin.

R 51/53

Toxic to aquatic organisms, may cause long-term adverse effects.

R 65

Harmful: may cause lung damage if swallowed.

R 67

Vapours may cause drowsiness and dizziness.

3.4 Classification system: The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4. First aid measures:

4.1 General information:

Personal protection for the first aider.

Remove contaminated clothing immediately.

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

4.2 After inhalation:

Move affected person to fresh air and bring into a stable position. Supply fresh air; if necessary give mouth-to-mouth resuscitation and keep patient warm. If symptoms persist please seek medical advice.

In case of unconsciousness place patient stably in side position for transportation.



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- 4.3 After skin contact: Take off and remove contaminated clothing, also underwear, shoes and socks.
Immediately wash with water and soap and rinse thoroughly.
If irritating of the skin persists consult a doctor.
- 4.4 After eye contact: Rinse open eye for several minutes under running water. If symptoms persist, consult an ophthalmologist.
- 4.5 After swallowing: Do not induce vomiting.
Consult a doctor; do not administer milk or fatty oils.
If patient is lying on its back and vomiting please turn him onto his side.
If vomiting it is necessary to bring the patient into the head-down position (increased risk of aspiration or perforation).
- 4.6 Information for the doctor: According to our knowledge, the toxicological properties of this product have not been thoroughly investigated.
- 4.7 Following symptoms can appear: Irritation of eyes, skin and mucous membrane.
Irritation of the respiration tract.
Tiredness.
Drowsiness.
Narcosis.
Breathlessness.
Headache.
Dizziness.
Cramps.
Unconsciousness.
Sickness.
- 4.8 Risks: We do not have any descriptions of possible more symptoms.
Prolonged or repeated skin contact may cause dermatitis due to the degreasing effect of the product.
Risk of aspiration into the lung after swallowing with following vomiting.
This can cause suffocation or a toxic pulmonary oedema.
Risk of circulatory collapse.
Risk of pneumonia.
Risk of respiratory disorder.
Risk of pulmonary oedema.
Central nervous system disorders.
- 4.9 Treatment: Elementary help.
Symptomatic and supportive.

5. Fire Fighting measures:

- 5.1 Suitable extinguishing agents: CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 For safety reasons unsuitable extinguishing agents: Water with full jet.
- 5.3 Special hazards caused by the material, its products of combustion or flue gases: During heating or in case of fire formations of toxic gases are possible.
In case of fire carbon monoxide or carbon dioxide can be released.
- 5.4 Special protective equipment: Wear self-contained breathing apparatus and protective clothing.
- 5.5 Additional information: Collect contaminated fire fighting water separately; the product is not allowed to enter the canalisation.
Cool endangered containers with the water jet.
In case of fire container can explode.
Fire classification B: liquid or liquefying substances (DIN EN 2).



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6. Accidental release measures:

- | | | |
|-----|--|---|
| 6.1 | Person-related safety precautions: | Keep persons away and stay on the windward side.
Use breathing apparatus. Wear protective equipment. Keep unprotected persons away. Keep away ignition sources. |
| 6.2 | Measures for environmental protection: | Provide adequate ventilation. Bring persons to a safe place.
Defeat gases / vapours / mist with a water jet.
Prevent entry into drains, pits and cellars.
Do not allow to enter sewers / surface water / ground water or ground.
In case of huge amounts entering the waters / drains or ground contact the responsible public authorities. |
| 6.3 | Measures for cleaning / collecting: | Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Secondary cleaning with water.
Use suitable containers for transporting the product to disposal or recycling.
Dispose contaminated material regarding to section 13. |

7. Handling and Storage:

- | | | |
|-----|--|--|
| 7.1 | Handling:
Information for safe handling: | Keep container tightly sealed.
Avoid formation of aerosol.
Ensure good ventilation / exhaustion at the workplace.
Ensure good room ventilation even at ground level (vapours are heavier than air).
Narrow the inventory level in the work.
Discharge waste air only over suitable separators.
Do not ventilate the waste air back into the workplace. |
| | Information about fire- and explosion protection: | Vapours may form an explosive mixture with air.
Keep ignition sources away – Do not smoke.
Protect against electrostatic charges.
Use only in explosion protected area.
Use only explosion protected equipments / fittings and non-sparking tools.
Ignitable mixtures can form in empty containers.
Temperature class (VDE 0165): T3
Maximum surface temperature of equipment: 200°C.
Ignition temperatures of the flammable materials: >200°C |
| 7.2 | Storage:
Requirements to be met by storerooms and containers: | Store in a cool location.
Preferably store in original container.
Provide Solvent-resistant and sealed floor.
Provide floor pan without drain.
Please notice the Technical Regulations for Combustible Liquids (TRbF) for general and construction requirements, the definition of explosion hazardous areas, and information on fire protection systems.
TRbF 20 applies to storages
TRbF 30 applies to filling and emptying points
TRbF 50 applies to pipelines
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Regarding to the directive for explosion protection following measures are required:
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ventilation, alarm systems).
 - Preventing the ignition of an explosive atmosphere (Zoning, eliminating sources of ignition and explosion-proof electrical installation, grounding)
 - Constructive measures to limit the impact of an explosion (explosion-proof construction, explosion venting, explosion suppression)

Measures against static charges.

All parts which could get dangerous while charging should be grounded.

Use Explosion-proof electrical equipment, pumps, fittings, and valves.

Observe official regulations on storing packaging with pressurized containers.

7.3 Information about storing in one common storage facility:

Do not store with foods.

Do not store with products which could cause dangerous chemical reactions with this product.

See also section 10. Stability and Reactivity.

7.4 Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Store in a good ventilated place.

Keep product locked up and inaccessible for children.

7.5 Recommended storage temperature:

< +30°C

7.6 Storage class:

3A flammable liquids.

Vapour pressure at 50°C ≤ 300kPa [3bar] and

-flash point < = 55°C

- flash point between 21°C and 55°C - miscible with water according to TRbF 003.

R10, R11, R12

7.7 Classification:

Highly flammable.

8. Exposure controls / Personal protection:

Additional information about design of technical facilities: No further data; see item 7.

8.1 Ingredients with limit values that require monitoring at the workplace:

Aliphatic carbon hydride mixture, predominantly within the range C6.	
MAC	600 mg/m ³ , 170 ml/m ³ TRGS 900/901 group 5
110-54-3 n-Hexane	
MAC	180 mg/m ³ , 50 ml/m ³ Y; DFG

8.2 Additional information:

The lists valid during the making were used as basis.

8.3 Personal protective equipment: General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Immediately remove all soiled and contaminated clothing

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

During work do not eat, drink, smoke or snuff.

8.4 Respiratory protection:

Respiratory protection is not required for the use in closed systems or rooms with adequate ventilation.

It is required In case of insufficient ventilation.

In case of intensive or longer exposure use self-contained respiratory protective device.

Filter AX, brown, low-boiling organic compounds



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(boiling point $\leq 65^{\circ}\text{C}$)

These filters are for the single-use.

Maximum use concentration: 100 ml/m³ for a maximum of 40 minutes ; 500 ml/ m³ for a maximum of 20 minutes.

In case of higher exposure use self-contained respiratory protective device.

Take notice of the wearing time limits for the respiratory protective device.

8.5 Protection of hands:

Protective gloves for handling chemicals.

To avoid skin problems do not wear the gloves longer than necessary.

The glove material has to be impermeable and resistant to the product / the substance / the preparation.

Before using the gloves make sure they are intact.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Recommendation for preventive skin protection: use of skin protection products

8.6 Material of gloves:

Full contact:

Nitrile rubber gloves.

Recommended material thickness: $\geq 0,35$ mm

Gloves made of fluororubber.

Recommended material thickness: $\geq 0,70$ mm

Splatter contact:

Butyl rubber gloves.

Recommended material thickness: $\geq 0,70$ mm

The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Ask the manufacturer for the suitable material.

8.7 Penetration time of glove material:

Full contact:

Penetration time: > 480 minutes (8h).

Splatter contact:

Penetration time: $> 10 - < 30$ minutes.

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

The time specifications are guideline values.

Increased temperatures due to heated substances, body heat, etc. and a reduction of thickness due to stretching can lead to a reduction of the breakthrough time.

The penetration time depends on the layer thickness.

8.8 Glove materials which are not suitable:

Gloves made of leather.

Gloves made of thick material.

8.9 Eye protection:

Tightly sealed goggles.

Body protection:

Solvent-resistant protective clothing.

Antistatic protective clothing.

Flame retardant protective clothing.

Protective apron.

Boots.

Or a suitable chemical protective suit.

Body protection should be selected workplace specifically according to the concentration and amount of the hazardous materials.

The chemical resistance of the protection clothing should be requested from the supplier.



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9. Physical and chemical properties:

9.1 General information:	
Form:	Fluid
Colour:	Colourless, clear
Odour:	Characteristic
9.2 Change in condition:	
Melting point / Melting range:	< -20°C
Boiling point / Boiling range:	~ 54°C
Flash point:	- 33°C
Ignition temperature:	> 200°C
Danger of explosion:	Product is not explosive. However, formations of explosive air/vapour mixtures are possible.
Explosion limits:	
Lower:	1,1 Vol %
Upper:	7,4 Vol %
Vapour pressure at 20°C:	240 hPa
Density at 15°C:	0,658 - 0,670 g/cm ³
Solubility in / miscibility with water at 20°C:	< 1g/l
n-octanol-water partition coefficient:	~ 4 log POW

10. Stability and Reactivity:

10.1 Thermal decomposition / conditions to be avoided:	No decomposition if used according to specifications. At normal pressure distillation is possible when undecomposed.
10.2 Dangerous reactions:	Formations of explosive gases with air. Reactions with oxidising agents.
10.3 Dangerous decomposition products:	Flammable gases / vapours. In case of fire following can be released: toxic gases / vapours carbon monoxide and carbon dioxide

11. Toxicological Information:

11.1 Acute toxicity:	
LD/LC50 values relevant for classification:	
Oral	LD50 > 2000 mg/kg (rat)
Dermal	LD50 > 2000 mg/kg (rat)
Inhalativ	LC50/4 h > 190 mg/l (rat)
11.2 Primary irritant effect:	
On the skin:	Irritant.
On the eye:	Slightly irritant effect.
Sensitization:	No sensitizing effects known.
11.3 Additional toxicological information:	The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Harmful. Irritant. Further hazardous characteristics cannot be excluded. The product should be handled with the usual care when working with chemicals.

12. Ecological Information:

12.1 Information about elimination (persistence and degradability):	
General notes:	The organic component is biodegradable.

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Mobility and bioaccumulation potential: Accumulation in organisms as a result of the n-octanol/water partition coefficient (log Pow >3) is possible.

Ecotoxic effect: The product is toxic to aquatic organisms.

Aquatic toxicity:

12.2 Aliphatic carbon hydride mixture, predominantly within the range C6.

EC50	>1 - <10 mg/l (DAPHNIA TOXICITY)
	>1 - <10 mg/l (ALGAE TOXICITY)
	>1 - <10 mg/l (BACTERIA TOXICITY)
EC50	>10- <100 mg/l (FISH TOXICITY)

12.3 General information: Toxic for water organisms.
Do not allow product to enter the ground water, waters, sewers or ground.
Water hazard class 1: slightly hazardous to water.

13. Disposal Considerations:

13.1 Product - Recommendation: Must not be disposed together with the household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

European Waste Catalogue:

07 00 00	WASTES FROM ORGANIC-CHEMICAL PROCESSES
07 01 00	Wastes from the manufacture, preparation, supply and application of organic basic chemicals.
07 01 04	Other organic solvents, suds and mother liquors.

13.2 Uncleaned packaging – Recommendation: Disposal must be made according to official regulations.
15 01 10 Packaging, which contains residues of hazardous substances or is contaminated with hazardous substances.

14. Transport Information:

Land transport ADR/RID (cross-border)



ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 33
UN-Number: 1208
Packaging group: II
Hazard label: 3
UN proper shipping name: 1208 HEXANE, solution

Maritime transport IMDG:



IMDG Class: 3
UN-Number: 1208
Label: 3
Packaging group: II
EMS-Number: F-E, S-D
Marine pollutant: No.
Proper shipping name: HEXANES, solution

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Air transport ICAO-TI and IATA-DGR:



ICAO/IATA-Class:	3
UN/ID-Number:	1208
Label:	3
Packaging group:	II
Proper shipping name:	HEXANES, solution

15. Regulatory Information:

15.1 Labelling according to EU guidelines: The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

15.2 Code letter and hazard designation of product:



Xn - harmful to health
F - highly flammable
N - hazardous to the environment

15.3 Hazard components for labelling: Aliphatic carbon hydride mixture, predominantly within the range C6.

15.4 R-phrases:

11	Highly flammable.
38	Irritating to skin.
51/53	Toxic to aquatic organisms, longer term damages in waters possible.
65	Harmful, may cause lung damages after swallowing.
67	Vapours may cause drowsiness and dizziness.

15.5 S-phrases:

9	Keep container in a well-ventilated place.
16	Keep away from sources of ignition – No smoking.
23	Do not breathe aerosol.
24	Avoid skin contact.
33	Take precautionary measures against static discharges.
61	Avoid release into the environment. Handle the product regarding to the special instructions of the material safety data sheet.
62	After swallowing do not induce vomiting. Seek immediately medical advice and show the packaging or label.

15.6 National regulations:

Restrictions of occupation: According to § 22 of the JArbSchG - Employment restrictions concerning young persons must be observed.
According to §§ 4 and 5 of the MuSchRiV Employment restrictions concerning pregnant and breastfeeding mothers must be observed.

Statutory order on hazardous incidents: Annex 1 - no. 9b
Harmful to the environment in connection with R51/53.
Quantity limits for operational areas according to section 1 paragraph 1.
- set 1: 500.000 kg
- set 2: 2.000.000 kg
Highly flammable.

Classification according to the Ordinance on Industrial Safety and Health:

Technical Instructions on Air Quality (TA Luft):
Class proportion in %:

Following values must not be exceeded:
Mass flow: 0, 50 kg/h or mass concentration: 50 mg/m³ each stated as total carbon.



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Chapter 5.2.5 organic substances,
exempt from pulverulent organic
substances (5.2.1):

Water hazard class:

S-phrase according to annex 7, index 22:0,1

1 - Slightly hazardous to waters.

16. Further Information:

This information is based on our present knowledge. However this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

16.1 Relevant R-phrases:

11	Highly flammable.
38	Irritating to skin.
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
51/53	Toxic to aquatic organisms, longer term damages in waters possible.
62	Possible risk of impaired fertility.
65	Harmful, may cause lung damages after swallowing.
67	Vapours may cause drowsiness and dizziness.

16.2 Abbreviations and acronyms:

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).
IMDG:	International Maritime Code for Dangerous Goods.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association".
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization".