SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH)

1. Substance/preparation and company name

Trade Name Luzar Synthetic Thermal Oil

Typical Applications Thermal oil

Company Sucesores de Carmelo Pérez Martínez

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Emergency phone no. +34 91 562 04 20

2. Hazard identification

2.1. Classification of the substance or mixture

Product definition: UVCB

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]: Asp. Tox. 1, H304

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended. See Section 16 for the full text of the H statements declared above.

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

2.2. Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements: H304 - May be fatal if swallowed and enters airways.

Precautonary statements

Prevention: Not applicable.

Response: P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or

physician. Do NOT induce vomiting Storage: P405 - Store locked up.

Disposal: P501 - Dispose of contents and container in accordance with all local, regional, national

and international regulations.

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Hazardous ingredients: Benzene, mono-C10-13-alkyl derivs., distn. residues

Supplemental label elements: Not applicable.

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

Special packaging requirements

Containers to be fitted with child-resistant fastenings: Not applicable.

Tactile warning of danger: Not applicable.

2.3. Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII: No. P: Not applicable. B: No. T: Yes.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII: No.

vP: Not applicable. vB: No.

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

3. Composition/Information on ingredients

Substances: UVCB

Description: Heavy linear alkylbenzene containing primarily dialkylbenzenes.

Chemical name	CAS-No	EC-No	%	Regulation (EC) No. 1272/2008 [CLP]	Туре
Benzene, mono-C10-13- alkyl derivs., distn. residues	84961-70-6	284-660-7	100%	Asp. Tox. 1, H304	[A]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[*] Substance

[A] Constituent

[B] Impurity

[C] Stabilizing additive

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

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4. First aid measures

4.1. Description of first aid measures

After eye contact

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

After skin contact

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

After inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

After ingestion

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data. **Skin contact:** No specific data.

Ingestion: Adverse symptoms may include the following: nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

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5. Fire fighting measures

Extinguishing media

Use dry chemical, CO₂, water spray (fog) or foam.

Do not use water.

Special hazards arising from the substance or mixture

Hazards from the substance or mixture:

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products:

No specific data.

Advice for firefighters

Special protective actions for firefighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Fire-fighting measures:

Shut off all ignition sources. If fire cannot be extinguished, withdraw from area and allow the fire to burn. Use water spray to keep fire-exposed containers cool.

Additional information:

IMPORTANT NOTE: Industrial use of heat transfer fluids and /or the use at elevated temperatures.

During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products. During removal of low boiling decomposition products with potential highly flammable properties from the system, appropriate risk management measures for flammable liquids have to be applied – especially when they are concentrated and collected. Risk management measurements for flammable liquids are at least: Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Advice on protection against fire and explosion: Take the normal measures for preventive fire protection.

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

6. Accidental release measures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist.

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Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

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

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Small spill:

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill:

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

Contaminated absorbent material may pose the same hazard as the spilled product.

6.4. Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

7. Handling and storage

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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Conditions for safe storage, including any incompatibilities

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

Specific end use(s)

No information available.

8. Exposure controls and personal protection

8.1. Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

DNEL (Workers):

Substance -		Ac	ute	Long Term	
Substance		Systemic	Local	Systemic	Local
Benzene, mono-C10-13-alkyl derivs., distn. residues	Dermal	Not relevant	Not relevant	8,6 mg/kg bw/day	Not relevant

Predicted effect concentrations

Substance	Fresh Water	Sea Water	Fresh Water	Fresh Water Sediment	Sea Water Sediment	Sewage Treatment Plant
Benzene, mono-C10-13-alkyl derivs., distn. residues	0,000075 mg/l	0,000075 mg/l	0,001 mg/l	1761 mg/kg	1761 mg/kg	2 mg/l

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8.2. Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures:

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

Eye/face protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: Splash goggles.

Skin protection

Hand protection:

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

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Full suit. PVC gloves. Neoprene gloves.

Other skin protection:

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

Respiratory protection:

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: In case of insufficient ventilation, wear suitable respiratory equipment. Gas filter mask must be worn.

Environmental exposure controls:

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

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9. Physical and chemical properties.

Physical state
Colour
Yellowish
Odour
Characteristic
Odour threshold
No data available
No data available

Melting/freezing point <-39°C

Initial boiling point 300,4 to 407,5°C

and boiling range

Flash point Closed cup: 172,8°C

Open cup: 180°C

Evaporation rate No data available

Flammability(solid,gas) Container explosion may occur under fire conditions or

when heated

Burning time

Burning rate

Upper/lower flammability

Not applicable

Not applicable

No data available

or explosive limits

Vapour pressure <0,005 kPa [room temperature]

Vapour density No data available

Relative density 0,86 to 0,88 [ASTM D 4052-96]

Density

Solubility(ies) Insoluble in the following materials: cold water and hot

water

Solubility in waterNo data available

Partition coefficient: 6,7

n-octanol/ water

Autoignition temperature 310°C

Decomposition temperature No data available

Viscosity Kinematic (room temperature): 0,449 cm²/s [OECD 117]

Kinematic (40° C): 0,14 to 0,23 cm²/s [OECD 117]

Explosive properties IMPORTANT NOTE: Industrial use of heat transfer fluids

and /or the use at elevated temperatures

During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products. During removal of low boiling decomposition products with potential highly flammable properties from the system, appropriate risk management measures for flammable liquids have to be applied – especially when they are concentrated and collected. Risk management measurements for flammable liquids are at least: Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Advice on protection against fire and explosion: Take the normal measures for preventive fire protection.

Oxidizing properties No data available Molecular weight 350 to 380 g/mole

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10. Stability and reactivity

Reactivity

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

Chemical stability

The product is stable.

Possibility of hazardous reactions

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

Conditions to avoid

No specific data.

Incompatible materials

No specific data.

Hazardous decomposition products

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

11. Toxicological data

Data for benzene, mono-C10-13-alkyl derivs., distn. residues:

Acute Toxicity:

Exposure	Parameter	Value	Exposure time	Species
Dermal	LD50	>3600 mg/Kg	-	Rat - Female
Dermal	LD50	>4300 mg/Kg	-	Rat - Male
Oral	LD50	>2000 mg/Kg	-	Rat - Male

Conclusion:

Not available

Corrosion or irritation:

Exposure	Score	Exposure time	Observation	Species
Skin - Primary dermal irritation index (PDII)	1,25	4 h	10 days	Rabbit
Skin - Primary dermal irritation index (PDII)	0,55	24 h	7 days	Rabbit

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Conclusion:

Eyes: Not available. Skin: Not available.

Respiratory: Not available.

Sensitization:

Conclusion:

Not available.

Mutagenicity:

Test	Experiment	Result
OECD 471 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
OECD 473 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
OECD 476 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative

Conclusion:

Not available.

Carcinogenicity:

Conclusion:

Not available.

Reproductive toxicity:

Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Negative	Negative	Negative	Rat	Oral	-
Negative	Negative	Negative	Rat	Oral	-

Conclusion:

Not available.

Specific target organ toxicity (single exposure):

Not available.

Specific target organ toxicity (repeated exposure):

Not available.

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Aspiration hazard:

Result: ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure: Not available.

Potential acute health effects:

Eye contact: No known significant effects or critical hazards. Inhalation: No known significant effects or critical hazards. Skin contact: No known significant effects or critical hazards. Ingestion: May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye contact: No specific data. Inhalation: No specific data. Skin contact: No specific data.

Ingestion: Adverse symptoms may include the following: nausea or vomiting.

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

Short term exposure

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

Long term exposure

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

Potential chronic health effects:

Result	Species	Dose	Exposure
Sub-chronic NOAEL Oral	Rat - Male	500 mg/kg	39 days; 5 days per week
Sub-chronic LOAEL Oral	Rat	1000 mg/kg	39 days; 5 days per week
Sub-chronic NOAEL Oral	Rat - Female	1000 mg/kg	39 days; 5 days per week
Chronic NOAEL Oral	Rat - Male, Female	1000 mg/kg	90 days; 5 days per week
Chronic LOAEL Oral	Rat - Male, Female	8000 mg/kg	90 days; 5 days per week

Conclusion:

Not available.

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards. Mutagenicity: No known significant effects or critical hazards.

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Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Other information: Not available.

12. Ecological data

Data for benzene, mono-C10-13-alkyl derivs., distn. residues:

Toxicity

Study	Parameter	Value	Test Time	Specie	Environment
Acute Toxicity fishes	LC50	>100 mg/l	96 h	Pimephales promelas	Fresh Water
Acute Toxicity invertebrates	NOEC	>100 ppb	144 h	Daphnia magna	-
Acute Toxicity invertebrates	NOEC	1,4 mg/l	48 h	Daphnia magna straus	-
Acute Toxicity algae	NOEC	2,08 mg/l	72 h	Scenedesmus subspicatus	Fresh Water
Acute Toxicity fishes	NOEC	>10 ppb	14 d	Brachydanio rerio	Fresh Water
Chronic Toxicity invertebrates	LOAEL	0,015 mg/l	21 d	Daphnia	-
Chronic Toxicity invertebrates	NOEC	0,0075 mg/l	21 days	Daphnia magna	Fresh Water

Conclusion:

Not available.

Persistence and degradability

Test	Value	Test Duration	Dose	Inoculum
EU BODIS	28%	28 days	6 mg/l	-

Aquatic half-life	Photolysis	Biodegradability
-	-	Inherent

Conclusion:

Not available.

Bioaccumulation potential

Log Pow	BCF	Potential
6,7	3,162	Low

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Mobility in soil

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

Mobility: Not available.

Results of PBT and vPvB assessment

PBT: No.

P: Not applicable. B: No. T: Yes.

vPvB: No.

vP: Not applicable. vB: No.

Other adverse effects

No known significant effects or critical hazards.

13. Disposal considerations

Waste treatment methods

The generation of waste should be avoided or minimized wherever possible.

Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

Methods of disposal

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

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

In accordance with ADN / ADR / IATA / IMDG / RID

Special precautions for user

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

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Transport in bulk according to Annex II of MARPOL and the IBC Code

Proper shipping name: Alkylbenzene distillation bottoms(n)

Ship type: 2

Pollution category: Y

15. Regulatory information

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

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

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

International Convention for the Prevention of Pollution From Ships, MARPOL 73 in its amended form.

International Maritime Dangerous Goods (Code IMDG) according to chapter VII of the Internation Convention for the Safety of Life at Sea, 1974.

Annex XIV - List of substances subject to authorization:

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations:

Europe inventory

This material is listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations:

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

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Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists:

National inventory

Australia: This material is listed or exempted.

Canada: This material is not listed in DSL but is listed in NDSL.

China: This material is listed or exempted.

Japan: Japan inventory (ENCS): Not determined.

Japan inventory (ISHL): Not determined.

Malaysia: Not determined. New Zealand: Not determined. Philippines: Not determined.

Republic of Korea: Not determined.

Taiwan: This material is listed or exempted.

Turkey: Not determined.

United States: This material is listed or exempted.

15.2. Chemical Safety Assessment

Complete

16. Further information

Abbreviations and acronyms

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement

PNEC = Predicted No Effect Concentration

RRN = REACH Registration Number

This safety data sheet is intended to provide information and recommendations as to: 1. how to handle chemical substances and preparations in accordance with the essential requirements of safety precautions and physical, toxicological and ecological data. 2. how to handle, store, use and transport them safety.

No liability for damage occurred in connection with the use of this information or with the use, application, adaptation or processing the products here described will be accepted. No liability will be accepted for damage indirectly incurred.

We provide this information data according to our present level of knowledge and experience. No assurances concerning the characteristics of our product are hereby furnished.

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