

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended



Rodutherm N

Creation date 9th November 2025

Revision date Version 1.0

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

- 1.1. Product identifier** RODUTHERM N
Substance / mixture mixture
Composition name Benzene, mono-C10-13-alkyl derivs., distrn. residues
CAS number 84961-70-6
EC (EINECS) number 284-660-7
- 1.2. Relevant identified uses** mixture or mixture **uses advised against**
Substance's intended use
Heat transferring fluid.
Industrial uses.
Commercial uses.
The use descriptors
PC 16 Heat transfer fluids
Substance uses advised against
The product should not be used in ways other than those referred in Section 1. Do not use for private purposes.
- 1.3. Details supplier safety data sheet**
Supplier
Name or trade name Rodutherm N
Address Productieweg 8, 3481MH, Harmelen
Netherlands
Phone +31 6 1027 5211
E-mail info@rodun-int.com
Web address https://rodun-int.com
Competent person responsible for the safety data sheet
Name Rodun International BV
E-mail info@rodun-int.cm
- 1.4. Emergency telephone number**
+31 6 1027 5211; 24 hrs

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Eye Irrit. 2/H319; Skin Sens. 1B/H317; Repr. 1B/H360Fd; Aquatic Acute 1/H400; Aquatic Chronic 3/H412H332; H315; H319; H317; H360Fd; H335; EUH380; H410

Most serious adverse effects on human health and the environment

Harmful if inhaled. Causes skin/eye irritation. May cause allergic skin reaction. May damage fertility. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictogram



Dangerous mixture

Benzene, mono-C10-13-alkyl derivs., distrn. residues mixture
(EC: 284-660-7; CAS: 101-84-7)

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Hazard statements

H332; H315; H319; H317; H360Fd; H335; EUH380; H410 Harmful if inhaled. Causes skin/eye irritation. May cause allergic skin reaction. May damage fertility. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P501 Dispose contents/container to by handing over to person authorized to dispose of waste or by returning to the supplier.

2.3. Other hazards

Contains an endocrine disruptor (ED HH 1 / EUH380) at a concentration of $\geq 0.1\%$ (Benzene, mono-C10-13-alkyl derivs., distn. residues; Biphenyl). Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$. Does not contain any PMT or vPvM components. Special danger of slipping by leaking/spilling product.

SECTION 3: Composition/information on ingredients

3.1. Substances

Composition information

The substance specified

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 84961-70-6 EC: 284-660-7	substance main component Benzene, mono-C10-13-alkyl derivs., distn. residues	70 - <75	Eye Irrit. 2/H319; Skin Sens. 1B/H317; Repr. 1B/H360Fd; Aquatic Acute 1/H400; Aquatic Chronic 3/H412H332; H315; H319; H317; H360Fd; H335; EUH380; H410	1, 2, 3

Notes

- 1 A mixture for which exposure limits are set.
- 2 Not listed as SVHC concern -
- 3

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care your own safety. If any health problems are manifested or in doubt, inform a doctor show him information from this safety data sheet.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Take off contaminated clothing. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

If in eyes

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor. a (also remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes.

If swallowed

Rinse the mouth. No vomiting. To consult a doctor

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4.2. Most important symptoms effects, both acute delayed If inhaled

Not expected.

If on skin

Not expected.

If in eyes

Not expected.

If swallowed

Not expected.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this

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Storage class 10 - Other combustible non-combustible substances)

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

European Union

Commission Directive (EU) 2017/164

Substance name (component)	Type	Value
Benzene, mono-C10-13-alkyl derivs., distn. residues (CAS: 101-84-8)	OEL 8 hours	19 mg/m ³
	OEL 8 hours	1 ppm
	OEL 15 minutes	48 mg/m ³
	OEL 15 minutes	2 ppm
	OEL 8 hours	48 mg/m ³
	OEL 8 hours	2 ppm
	OEL 15 minutes	19 mg/m ³
	OEL 15 minutes	1 ppm

Germany

TRGS 900

Substance name (component)	Type	Value
Benzene, mono-C10-13-alkyl derivs., distn. residues (CAS: 101-84-8)	ASGW	19 mg/m ³

Germany

TRGS 900

Substance name (component)	Type	Value
Benzene, mono-C10-13-alkyl derivs., distn. residues (CAS: 101-84-8)	8h	19 mg/m ³
	8h	1 ppm
	Short	47,5 mg/m ³
	Short	2 ppm

Notes

Inhalable fraction dust.

DNEL

Benzene, mono-C10-13-alkyl derivs., distn. residues			
Workers / consumers	Route of exposure	Value	Effect
Workers	Inhalation	1.8 mg/kg	Chronic effects systemic
Workers	Dermal	0.7 mg/kg bw/day	Chronic effects systemic
Workers	Dermal	0.2 mg/cm ²	Chronic effects local
Workers	Inhalation	7 mg/m ³	Chronic effects local
Consumers	Dermal	38 mg/kg bw/day	Chronic effects systemic
Consumers	Dermal	1.9 mg/cm ²	Chronic effects local
Consumers	Inhalation	25 mg/m ³	Chronic effects local

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PNEC

Benzene, mono-C10-13-alkyl derivs., distn. residues	
Route of exposure	Value
Freshwater environment	2 µg/l
Marine water	0.2 µg/l
Freshwater sediment	3.29 mg/kg of dry substance of sediment
Sea sediments	0.329 mg/kg of dry substance of sediment
Soil (agricultural)	0.648 mg/kg of dry substance of soil

8.2. Exposure controls

Do not eat, drink smoke during work. Wash your hands thoroughly water soap after work and before breaks for a meal and rest.

Eye/face protection

EN166 - Personal Eye Protection Standard.

Skin protection

Hand protection: Protective gloves resistant to the product. Contaminated skin should be washed

Respiratory protection

Aerosol or fog formation: filter device (full mask or mouthpiece set) with filter: A2, A2/P2,

Thermal hazard

Not

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	data not available
color intensity	colourless - clear
Odour	characteristic
Melting point/freezing point	12 °C (literature)
Boiling point or initial boiling point boiling range	257 °C
Flammability	data not available
Lower upper explosion limit Flash point	data not available
Auto-ignition temperature	110 °C (DIN EN ISO 2719, closed
Decomposition temperature	cup)
pH	621 °C (literature)
Kinematic viscosity	data not available
Solubility in water	data not available
Partition coefficient n-octanol/water (log value)	2.48 mm²/s at 40 °C
Vapour pressure	0.025 g/l (25°C)
Density and/or relative density	>4.2 (20°C)
Density	not determined °C
Relative vapour density	
Particle characteristics	1062 g/cm³ at 20 °C

9.2. Other information

data not available

data not available

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not available

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is non-reactive under normal environmental conditions.

10.2. Composition stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing

10.6. Hazardous decomposition products

Spillage and fire water can cause pollution of watercourses. developed under normal uses. Danger outcomes such as carbon monoxide carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

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

No toxicological data is available for the substance. Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time.

Acute toxicity

Based on available data the classification criteria are not

Benzene, mono-C10-13-alkyl derivs., distn. residues					
Route of exposure	Parameter	Value	Exposure time	Species	Sex
Oral	LD50	>10000 mg/kg		Rat (Rattus norvegicus)	
Inhalation (dust/mist)	LC50	>5 mg/l		Rat (Rattus norvegicus)	
Dermal	LD50	>2000 mg/kg		Rabbit	

Skin corrosion/irritation

No data available for the substance. Based on available data the classification criteria are not

Serious eye damage/irritation

No data available for the substance. Based on available data the classification criteria are not

Respiratory or skin sensitisation

No data available for the substance. Based on available data the classification criteria are not

Germ cell mutagenicity

No data available for the substance. Based on available data the classification criteria are not

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Carcinogenicity

No data available for the substance. Based on available data the classification criteria are not

Reproductive toxicity

No data available for the substance. Based on available data the classification criteria are not

Toxicity for specific target organ - single exposure

No data available for the substance. Based on available data the classification criteria are not

Toxicity for specific target organ - repeated exposure

No data available for the substance. Based on available data the classification criteria are not

Aspiration hazard

No data available for the substance. Based on available data the classification criteria are not

11.2. Information on other hazards

Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption for humans.

Other information

not available

SECTION 12: Ecological information

12.1. Toxicity

Harmful if inhaled. Causes skin/eye irritation. May cause allergic skin reaction. May damage fertility. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

Acute toxicity

Benzene, mono-C10-13-alkyl derivs., distn. residues					
Parameter	Method	Value	Exposure time	Species	Environment
EC50		>1 mg/l	48 hours	Daphnia (Daphnia magna)	
EC50		56 mg/l	96 hours	Algae (Selenastrum capricornutum)	
LC50		>1000 mg/l	96 hours	Fish	
NOELR	OECD 211	1 mg/l	21 days	Algae (Selenastrum capricornutum)	

12.2. Persistence degradability

The following data are available.

Biodegradability

Benzene, mono-C10-13-alkyl derivs., distn. residues				
Parameter	Value	Exposure time	Environment	Result
				bioaccumulative, Very persistent

12.3. Bioaccumulative potential

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The following data are

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Benzene, mono-C10-13-alkyl derivs., distn. residues

Parameter	Value	Exposure time	Species	Environment	Temperature [°C]
	196				

12.4. Mobility in soil

Based on available data the classification criteria are not met. Does not contain any PMT or vPvM

Benzene, mono-C10-13-alkyl derivs., distn. residues

Parameter	Value
	4.21

12.5. Results of PBT and vPvB assessment

Based on available data the classification criteria are not met. Contains vPvB

12.6. Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption in the environment.

12.7. Other adverse effects

Not

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in

Waste management legislation

Law on the placing on the market, return and high-quality recycling of packaging (Packaging Act - VerpackG) of June 9th, 2021, valid from January 1st, 2022. Ordinance on the European List of Waste (German Waste Catalogue Ordinance -Verordnung über das Europäische Abfallverzeichnis - AVV). Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number or ID number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (terphenyl),

14.3. Transport hazard class(es)

9 Miscellaneous dangerous substances and articles

14.4. Packing group

III

14.5. Environmental hazards

Gewässergefährdend

14.6. Special precautions for user

Reference in the Sections 4 to 8.

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14.7. Maritime transport in bulk according to IMO instruments

not relevant

Additional information

Hazard identification No.

90

UN number

3082

Classification code

M6

Safety signs

9+dangerous for the environment



Road transport - ADR

Special provisions

274, 335, 375, 601

Limited quantities

5 L

Excepted quantities

E1

Packaging

Packing instructions

P001, IBC03, LP01, R001

Special packing provisions

PP1

Mixed packing provisions

MP19

Portable tanks and bulk containers

Guidelines

T4

Special provisions

TP1, TP29

ADR tank

Tank code

LGBV

Vehicles for tank carriage

AT

Transport category

3

Tunnel restriction code

(-)

Special provision for

packages

V12

loading, unloading and handling

CV13

Railway transport - RID

Special provisions

274, 335, 375, 601

Packaging

Packing instructions

P001, IBC03, LP01, R001

Special packing provisions

PP1

Mixed packing provisions

MP19

Portable tanks and bulk containers

Guidelines

T4

Special provisions

TP1, TP29

RID Tanks

Tank code

LGBV

Transport category

3

Special provision for

packages

W12

loading, unloading and handling

CW13

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Air transport - ICAO/IATA

Packaging instructions for limited amount Y964

Packaging instructions passenger 964

Cargo packaging instructions 964

Marine transport - IMDG

EmS (emergency plan) F-A, S-F

SECTION 15: Regulatory information

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

REACH - Candidate list substances concern for authorisation (Article 59). Not listed (mixture; no REACH registration)

Regulation (EC) No 1005/2009 on substances that deplete ozone layer Not applicable

Regulation (EC) No 850/2004 on organic pollutants Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
E2

TA Luft

Total dust:

Not applicable

Particulate inorganic substances:

Not applicable

Vaporous or gaseous inorganic substances:

Not applicable

Organic substances:

Not applicable

Carcinogenic substances:

Spillage and fire water

can cause pollution of

watercourses.

applicable Mutagenic:

Not applicable

Toxic for reproduction:

Not applicable

Volatile organic compounds

Directive 2010/75/EU European Parliament Council 24 November 2010 on industrial emissions (integrated pollution prevention and control)

Not applicable

TA Luft (Germany)

5.2.5; organic substances Class I; $\geq 25\%$ by weight; 0.1 kg/h 20 mg/m^3 ; the mass flow 0.50 kg/h or the mass concentration 50 mg/m^3 , each indicated as total carbon, must not be exceeded in total (except for dusty organic substances)

5.2.7.2 poorly degradable, easily enriched and highly toxic organic substances; $\geq 25 \text{ wt.}\%$; in compliance with the emission minimization requirement

National regulations (Germany)

WGK Water hazard class:

WGK 2 - obviously hazardous to water

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15.2. Composition safety assessment

A chemical safety assessment has been carried out for this substance by the supplier.

More information

The components of this product are listed on the following inventories:

DSL

All components this product are on Canadian DSL Inventory AIIC

On Inventory or in compliance Inventory ISHL

On Inventory or in compliance Inventory KECI

On Inventory or in compliance Inventory PICCS

On Inventory or in compliance Inventory IECSC

On Inventory or in compliance Inventory TCSI

On Inventory or in compliance Inventory TSCA

All substances are listed as active on the TSCA Inventory

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H332; H315; H319; H317; H360Fd; H335; EUH380; H410 Harmful if inhaled. Causes skin/eye irritation. May cause allergic skin reaction. May damage fertility. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.

Guidelines for safe handling used in the safety data sheet

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P501 Dispose contents/container to by handing over to person authorized to dispose of waste or by returning to the supplier.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR European agreement concerning international carriage dangerous goods by road

AGW Occupational Exposure Limits

Aquatic Chronic Hazardous to aquatic environment (chronic)

BCF Bioconcentration Factor

CAS Composition Abstracts Service

CLP Regulation (EC) No 1272/2008 on classification, labelling packaging of substance and mixtures

EC Identification code for each substance listed in EINECS

EC50 Concentration of a substance when it is affected 50 % of the population

EINECS European Inventory of Existing Commercial Chemical Substances

EmS Emergency plan

EU European Union

EuPCS European Product Categorisation System

IATA International Air Transport Association

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IBC	International Code For The Construction And Equipment Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC50	Lethal concentration a mixture in which it can be expected death 50% of the population
LD50	Lethal dose a mixture in which it can be expected death 50% the population
log Kow	Octanol-water partition coefficient
MAK	Maximum workplace concentration
NOEL	No observed effect level
NOELR	No Observed Effect Loading Rate
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
PMT	Persistent, mobile and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number mixture or article taken from UN Model Regulations
UVCB	Substances unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very
vPvM	persistent and very mobile

Training guidelines

Inform personnel about recommended ways use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from manufacturer mixture / mixture, available - information from registration dossiers.

More information

Classification procedure - calculation method.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.