

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Test fluid 103 for simulation of hydraulic oils from phosphate esters according to DIN ISO 1817:2008

Revision date: 15.03.2023

Product code: 24556

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

1.1. Product identifier

Test fluid 103 for simulation of hydraulic oils from phosphate esters according to DIN ISO 1817:2008

REACH Registration Number: 01-2119492859-14-XXXX
CAS No: 126-73-8
Index No: 015-014-00-2
EC No: 204-800-2

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

Use of the substance/mixture

Laboratory chemicals
Industrial uses: Uses of substances as such or in preparations at industrial sites
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH
Street: Stempelstraße 6
Place: D-47167 Duisburg
Telephone: 0203/5194-0
e-mail: info@analytichem.de
Contact person: Abteilung Produktsicherheit
e-mail: produktsicherheit@analytichem.de
Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit

Telefax: 0203/5194-290

Telephone: 0203/5194-107/117

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Carc. 2; H351
Acute Tox. 4; H302
Skin Irrit. 2; H315
Aquatic Chronic 3; H412

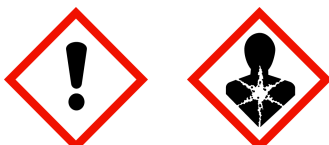
Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Warning

Pictograms:



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Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P308 IF exposed or concerned:
P313 Get medical advice/attention.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C₁₂H₂₇O₄P
Molecular weight: 266,31 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
126-73-8	tributyl phosphate			100 %
	204-800-2	015-014-00-2	01-2119492859-14-	
	Carc. 2, Acute Tox. 4, Skin Irrit. 2, Aquatic Chronic 3; H351 H302 H315 H412			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
126-73-8	204-800-2	tributyl phosphate	100 %
	dermal: LD50 = > 3100 mg/kg; oral: LD50 = 1552 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.
Call a physician immediately.

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

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After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Gastrointestinal complaints
Irritant
Headache

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam
Carbon dioxide (CO₂)
Extinguishing powder

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids
Hazardous combustion products
In case of fire may be liberated: Phosphorus oxides
In case of warming:
Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

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For containment

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

- Clean contaminated articles and floor according to the environmental legislation.

Other information

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

- Avoid exposure - obtain special instructions before use.
- Read label before use. Handle and open container with care.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment.
- Do not breathe vapour/aerosol.
- Provide adequate ventilation.

Advice on protection against fire and explosion

- Usual measures for fire prevention.
- In case of warming:
Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Advice on general occupational hygiene

- Keep away from food, drink and animal feedingstuffs.

Further information on handling

- Take off immediately all contaminated clothing and wash it before reuse.
- Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

- Keep container tightly closed.

Further information on storage conditions

- Keep cool. Protect from sunlight.
- storage temperature +15°C - +25°C

7.3. Specific end use(s)

- Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
126-73-8	Tributyl phosphate	-	5		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
126-73-8	tributyl phosphate			
Worker DNEL, long-term		inhalation	systemic	3,13 mg/m ³
Worker DNEL, acute		inhalation	systemic	12,52 mg/m ³
Worker DNEL, long-term		inhalation	local	3,13 mg/m ³
Worker DNEL, acute		inhalation	local	12,52 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,44 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	1,78 mg/kg bw/day
Worker DNEL, long-term		dermal	local	0,44 mg/cm ²
Worker DNEL, acute		dermal	local	1,78 mg/cm ²
Consumer DNEL, long-term		inhalation	systemic	0,77 mg/m ³
Consumer DNEL, acute		inhalation	systemic	3,08 mg/m ³
Consumer DNEL, long-term		inhalation	local	0,77 mg/m ³
Consumer DNEL, acute		inhalation	local	3,08 mg/m ³
Consumer DNEL, long-term		dermal	systemic	0,22 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	0,88 mg/kg bw/day
Consumer DNEL, long-term		dermal	local	0,22 mg/cm ²
Consumer DNEL, acute		dermal	local	0,88 mg/cm ²
Consumer DNEL, long-term		oral	systemic	0,22 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	0,88 mg/kg bw/day

PNEC values

CAS No	Substance	Value
126-73-8	tributyl phosphate	
Freshwater		0,082 mg/l
Micro-organisms in sewage treatment plants (STP)		1 mg/l

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

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Eye/face protection

goggles
Face protection umbrella

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact
Trade name/designation: KCL 898 Butoject®
Suitable material: Butyl caoutchouc (butyl rubber) 0,7 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation: KCL 890 Vitoject®
Suitable material: FKM (fluoro rubber) 0,7 mm
Wearing time with occasional contact (splashes): > 30 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Take off immediately all contaminated clothing and wash it before reuse.
Wash hands and face before breaks and after work and take a shower if necessary.
Draw up and observe skin protection programme.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation
Filtering device with filter or ventilator filtering device of type: A-(P2)

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	odourless
Melting point/freezing point:	-79 °C
Boiling point or initial boiling point and boiling range:	289 °C
Flammability:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Flash point:	146 °C
Auto-ignition temperature:	400 °C
Decomposition temperature:	177-178 °C
pH-Value:	No data available
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	~6 g/L

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Solubility in other solvents

No data available

Partition coefficient n-octanol/water:

No data available

Vapour pressure:
(at 20 °C)

0,008 hPa

Vapour pressure:
(at 50 °C)

0,08 hPa

Density (at 20 °C):

0,97 g/cm³

Bulk density:

No data available

Relative vapour density:

No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

In case of warming:

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

No data available

Solid content:

No data available

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

Viscosity / dynamic:
(at 20 °C)

3,5-4,0 mPa·s

Flow time:

No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming:

Vapours may form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent

Base

Amines

Acid

10.4. Conditions to avoid

Heat

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10.5. Incompatible materials

Plastic articles

10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

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

Toxicokinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

Acute toxicity

Harmful if swallowed.

Pulmonary oedema

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
126-73-8	tributyl phosphate				
	oral	LD50 mg/kg 1552	Rat	Study report (1986)	other: EG-Richtlinie 84/449
	dermal	LD50 mg/kg > 3100	Rabbit	Toxicol. Appl. Pharmacol. 41, 291-304 (1)	undiluted test material was applied to i

Irritation and corrosivity

Causes skin irritation.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (tributyl phosphate)

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

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Other information

No data available

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Further information

Gastrointestinal complaints
Irritant
Headache

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
126-73-8	tributyl phosphate					
	Acute fish toxicity	LC50 17 mg/l	96 h	Oryzias latipes	Environmental Toxicology and Water Quali	OECD Guideline 203
	Fish toxicity	NOEC 13,5 mg/l	10 d	Danio rerio	Comparative biochemistry and physiology.	Semistatic long term embryo-larval toxic
	Acute bacteria toxicity	(EC50 100 mg/l)	3 h	activated sludge of a predominantly domestic sewage	Ecotoxicology and Environmental Safety,	OECD Guideline 209

12.2. Persistence and degradability

92 %; 28 d; aerob
OECD-301D
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
126-73-8	tributyl phosphate	10100

BCF

CAS No	Chemical name	BCF	Species	Source
126-73-8	tributyl phosphate	>= 21	Oryzias latipes	Bull. Environm. Cont

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not allow to enter into surface water or drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number or ID number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

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Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	2 - obviously hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1.

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H351	Suspected of causing cancer.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.