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Safety data sheet according to 1907/2006/EC, Article 31

revised on: 21.09.2021 Version number 6 Creation Date: 27.01.2017

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

· 1.1 Product identifier

· Trade name: Isoamyl alcohol

· Article number: 1831

• **CAS Number:** 123-51-3

EC number: 204-633-5

· Index number: 603-006-00-7

· Registration number 01-2119493725-26-xxxx

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

· Life cycle stages

F Formulation or re-packing

IS Use at industrial Sites

· Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

· Product category

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

· Application of the substance / the mixture

Industrial use

Laboratory chemicals

Reagent for analysis

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Th. Geyer GmbH & Co. KG

Dornierstr. 4 - 6

D-71272 Renningen

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Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

· Further information obtainable from: Product management department

· 1.4 Emergency telephone number:

National Poisons Information Service

(Birmingham Centre)

City Hospital Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



Acute Tox. 4 H332 Harmful if inhaled.

STOT SE 3 H335 May cause respiratory irritation.

- · 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008

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

· Hazard pictograms





GHS02 GHS07

- · Signal word Warning
- · Hazard statements

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P243 Take action to prevent static discharges.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water

[or shower].

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

P403+P235 Store in a well-ventilated place. Keep cool.

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

regulations.

· Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

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· 2.3 Other hazards

· Results of PBT and vPvB assessment

PBT: Not applicable.vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description

123-51-3 3-methylbutan-1-ol

· Identification number(s)

EC number: 204-633-5

· Index number: 603-006-00-7

SECTION 4: First aid measures

· 4.1 Description of first aid measures

General information:

First aider needs to protect himself.

Immediately remove any clothing soiled by the product.

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

· After inhalation:

Remove person from danger area.

After massive inhalation even in the absence of symptoms:

get medical treatment.

· After skin contact:

Flush contaminated skijn with soap and plenty of water.

After prolonged contact or any signs of skin changes (redness or other signs of inflammation) seek medical attention.

take care of a Possiblility of inhalation at the same time

· After eye contact:

Rinse out opened eye for several minutes under running water.

Protect unharmed eye.

Seek immediate medical advice.

· After swallowing:

Rinse out mouth and then drink plenty of water.

A person vomiting while laying on their back should be turned onto their side.

Consult a physician.

· Information for doctor: Please observe safety data sheet/label.

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

Cramp

Vertigo

Gastric or intestinal disorders

Disorientation

Nausea

Risk of aspiration

4.3 Indication of any immediate medical attention and special treatment needed

Give Glucocorticoid-Aerosol in case of lung irritation.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

If swallowed, gastric irrigation with added, activated carbon.

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SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents:

Water spray, powder, carbon dioxide or foam. Fight larger fires with water spray or alcohol resistant foam.

- · For safety reasons unsuitable extinguishing agents: Water with full jet.
- · 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon dioxides (CO, CO□)

Combustible.

Formation of toxic gases is possible during heating or in case of fire.

- 5.3 Advice for firefighters
- · Protective equipment:

Wear fully protective suit.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Additional information

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol.

Evacuate the danger area.

Keep away from ignition sources.

Avoid contact with eves and skin.

Ensure adequate ventilation.

Wear protective equipment. Keep unprotected persons away.

- **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- · 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Dispose of the material collected according to regulations.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep receptacles tightly sealed.

Keep away from heat and direct sunlight.

Apply the general protection and hygiene measures for the handling with chemicals.

· Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- · 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
- · Requirements to be met by storerooms and receptacles:

Provide solvent resistant, sealed floor.

Store only in the original receptacle.

Information about storage in one common storage facility: Store away from oxidising agents.

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· Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Keep container tightly sealed.

Protect from heat and direct sunlight.

- · Storage class: 3
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- Additional information about design of technical facilities: No further data; see item 7.
- Ingredients with limit values that require monitoring at the workplace:

CAS: 123-51-3 3-methylbutan-1-ol

WEL Short-term value: 458 mg/m³, 125 ppm Long-term value: 366 mg/m³, 100 ppm

- Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · 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.

- · Respiratory protection: Recommended: Filter against aorganic fumes (Type A)
- · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

· Material of gloves

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

· Penetration time of glove material

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

· Eye protection:



Tightly sealed goggles

· Body protection:



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

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SECTION 9: Physical and chemi	cal properties
· 9.1 Information on basic physical and o · General Information · Appearance:	chemical properties
Form:	Fluid
Colour:	Colourless
· Odour:	Characteristic
· pH-value:	Not determined.
· Change in condition	
Melting point/freezing point:	-117.2 °C
Initial boiling point and boiling range	: 131–132 °C
· Flash point:	45 °C
· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	340 °C
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Not determined.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapoumixtures are possible.
· Explosion limits:	
Lower:	1.2 Vol %
Upper:	~8 Vol %
· Vapour pressure at 20 °C:	2.7 hPa
· Density at 20 °C:	0.81 g/cm³
	Not determined.
Relative density	Not determined.
· Vapour density	Not determined.
Evaporation rate	Not determined.
 Solubility in / Miscibility with water at 20 °C: 	25 g/l
· Partition coefficient: n-octanol/water:	Not determined.

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability Stable with proper storage and handling.
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Not determined.

Not determined.

No further relevant information available.

- · 10.3 Possibility of hazardous reactions Forms explosive gas mixture with air.
- · 10.4 Conditions to avoid Heat, flames and sparks
- 10.5 Incompatible materials: Avoid contact with other chemicals.
- 10.6 Hazardous decomposition products:

Flammable gases/vapours

· Viscosity: Dynamic:

Kinematic:

· 9.2 Other information

In case of fire / burns, development of hazardous combustion gases or vapors possible.

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SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity

Harmful if inhaled.

· LD/LC50	values re	levant fo	or class	ification	:

Oral	LD50	1,300 mg/kg (rat)
Dermal	LD50	3,212 mg/kg (rabbit)
Inhalative	LC50/4 h	11 mg/l (ATE)

- Primary irritant effect:
- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Based on available data, the classification criteria are not met.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · Subacute to chronic toxicity: -
- Additional toxicological information:
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- · Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure

May cause respiratory irritation.

- 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.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: No further relevant information available.
- · 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- 12.5 Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

Observe local (country-specific) regulations and laws

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Chemicals must be disposed of in compliance with the respective national regulations.

· European waste catalogue		
07 00 00	WASTES FROM ORGANIC CHEMICAL PROCESSES	
07 01 00	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals	
07 01 04*	other organic solvents, washing liquids and mother liquors	

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HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

- · Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.

14.1 UN-Number ADR, IMDG, IATA	UN1105
14.2 UN proper shipping name ADR IMDG, IATA	1105 PENTANOLS PENTANOLS
14.3 Transport hazard class(es)	
ADR	
Class Label	3 (F1) Flammable liquids.
Labei 	3
Class Label	3 Flammable liquids.3
14.4 Packing group ADR, IMDG, IATA	III
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user Hazard identification number (Kemler code): EMS Number:	Warning: Flammable liquids. 30 3-06
Stowage Category	A
14.7 Transport in bulk according to Annex II o Marpol and the IBC Code	f Not applicable.
Transport/Additional information:	. Tot approduct.
ADR	
Limited quantities (LQ) Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
Transport category Tunnel restriction code	3 D/E
IMDG Limited quantities (LQ)	5L

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· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1105 PENTANOLS, 3, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I Substance is not listed.
- Seveso category P5c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
- · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40
- · DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment Annex II

Substance is not listed.

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

Substance is not listed.

- · Annex II REPORTABLE EXPLOSIVES PRECURSORS Substance is not listed.
- · Regulation (EC) No 273/2004 on drug precursors Substance is not listed.
- · Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

Substance is not listed.

- · National regulations:
- · Information about limitation of use:

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 16: Other 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.

Application, use and handling of our products take place out of our control and are solely your responsibility.

- · Department issuing SDS: Product management
- · Contact: Product management
- Abbreviations and acronyms:

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids - Category 3

Acute Tox. 4: Acute toxicity - Category 4

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

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·* Data compared to the previous version altered.

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Annex: Exposure scenario

- · Short title of the exposure scenario Chemicals for Laboratory and industrial use
- · Sector of Use
- SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU9 Manufacture of fine chemicals
- SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU24 Scientific research and development

· Product category

- PC19 Intermediate
- PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC29 Pharmaceuticals
- PC39 Cosmetics, personal care products
- PC40 Extraction agents

· Process category

- PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
- PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
- PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
- PROC4 Chemical production where opportunity for exposure arises
- PROC5 Mixing or blending in batch processes
- PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- PROC15 Use as laboratory reagent

· Environmental release category

- ERC1 Manufacture of the substance
- ERC2 Formulation into mixture
- ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- ERC6a Use of intermediate

· Description of the activities / processes covered in the Exposure Scenario

See section 1 of the annex to the Safety Data Sheet.

- · Conditions of use
- · Duration and frequency 5 workdays/week.
- · Physical parameters
- · Physical state Fluid
- · Concentration of the substance in the mixture Raw material.
- · Other operational conditions
- · Other operational conditions affecting environmental exposure

Observe section 6 of the Safety Data Sheet (Accidental release measures).

- Other operational conditions affecting worker exposure Do not breathe gas/vapour/aerosol.
- Other operational conditions affecting consumer exposure No special measures required.
- Other operational conditions affecting consumer exposure during the use of the product Not applicable.
- · Risk management measures
- Worker protection
- Organisational protective measures

Provide Internal Plant Instruction.

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

The appropriate type of chemical protective glove has to be selected specifically, depending on the concentration and quantity of hazardous substances in the workplace.

Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

- · Technical protective measures Ensure that suitable extractors are available on processing machines
- \cdot Personal protective measures Do not inhale gases / fumes / aerosols.
- · Measures for consumer protection Ensure adequate labelling.

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· Environmental protection measures

· Water

Do not allow to reach ground water, water bodies or sewage system, not even in small quantities. Do not allow to reach sewage system. Dispose of this product and its container at hazardous or special waste collection point.

- · Soil Prevent contamination of soil.
- · Disposal measures Ensure that waste is collected and contained.
- · Disposal procedures

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

- · Waste type Partially emptied and uncleaned packaging
- · Exposure estimation
- Worker (oral) Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra.
- Worker (dermal) Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra.
- · Worker (inhalation)

Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra.

· Environment

Detailed information on the estimation of the environmental exposure can be found at http://ecb.jrc.ec.europa.eu/euses/.

- · Consumer Not relevant for this Exposure Scenario.
- Guidance for downstream users

For the risk assessment, the tools recommended by ECHA can be used.

No further relevant information available.

Ε