

LAVAVersion number: GHS 3.0
Replaces version of: 2024-10-07 (GHS 2)

Revision: 2024-12-16

1 Identification**1.1 Product identifier**Trade name **LAVA**
Alternative number(s) PR252**1.2 Relevant identified uses of the substance or mixture and uses advised against**Relevant identified uses professional use
Uses advised against Do not use for private purposes (household).**1.3 Details of the supplier of the safety data sheet**Tectonic-3D BV
High tech campus 9
5656AE Eindhoven
NetherlandsTelephone: +31 (0)40-8517575
e-mail: info@tectonic-3d.com**1.4 Emergency telephone number**

Emergency information service This number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

2 Hazard identification**2.1 Classification of the substance or mixture**

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	4	Flam. Liq. 4	H227

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labeling

- Signal word warning

- Pictograms not required

- Hazard statements
H227 Combustible liquid.- Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403 Store in a well-ventilated place.
P501 Dispose of contents/container to industrial combustion plant.

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2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

3 Composition/ Information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	CAS No 111109-77-4	≥ 30	Flam. Liq. 4 / H227
Hydrocarbons, C11-C13, isoalkanes	CAS No 246538-78-3	5 - < 10	Flam. Liq. 4 / H227 Asp. Tox. 1 / H304
3-methoxy-3-methylbutan-1-ol	CAS No 56539-66-3	5 - < 10	Flam. Liq. 4 / H227 Eye Irrit. 2 / H319
1,1'-[methylenebis(oxy)]dibutane	CAS No 2568-90-3	1 - < 5	Flam. Liq. 4 / H227

Remarks

For full text of abbreviations: see SECTION 16

4 First-aid measures

4.1 Description of first-aid measures

General notes

Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

Following skin contact

Take off contaminated clothing. Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In all cases of doubt, or when symptoms persist, seek medical advice. Call a physician in any case.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

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5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Foam, BC-powder

Unsuitable extinguishing media
Water jet

5.2 Special hazards arising from the substance or mixture

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products
Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Remove persons to safety.

For emergency responders
Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill
Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques
Use of adsorbent materials.

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

7 Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

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Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

store in a closed container under storage at normal ambient temperatures (minus 40° C to + 40° C), the product is stable

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Use local and general ventilation.

7.3 Specific end use(s)

See section 16 for a general overview.

8 Exposure controls/ Personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)
this information is not available

Relevant DNELs of components						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	DNEL	133 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	DNEL	22.1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
3-methoxy-3-methylbutan-1-ol	56539-66-3	DNEL	18 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
3-methoxy-3-methylbutan-1-ol	56539-66-3	DNEL	6.25 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
1,1'-[methylenebis(oxy)]di butane	2568-90-3	DNEL	126.6 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
1,1'-[methylenebis(oxy)]di butane	2568-90-3	DNEL	11.97 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

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Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	1 mg/l	aquatic organisms	freshwater	short-term (single instance)
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	0.1 mg/l	aquatic organisms	marine water	short-term (single instance)
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	1.16 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	1.16 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	PNEC	0.1 mg/kg	terrestrial organisms	soil	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	197.5 µg/l	aquatic organisms	freshwater	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	19.75 µg/l	aquatic organisms	marine water	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	1 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	4.347 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	0.435 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
1,1'-[methylenebis(oxy)]di butane	2568-90-3	PNEC	751.9 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

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Individual protection measures (personal protective equipment)

Eye/face protection 

Wear eye/face protection.

Skin protection 

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 0,5 mm. Breakthrough times of the glove material. >480 minutes (permeation: level 6). Recommended protective gloves (trademark/manufacturer). NBR: acrylonitrile-butadiene rubber. NR: natural rubber, latex.

- Other protection measures

Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapors and particles, color code: Brown/Grey/Yellow/Green/White).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
Melting point/freezing point	<0 °C at 1,013 hPa
Boiling point or initial boiling point and boiling range	not determined
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	not determined
Flash point	61 °C at 1 atm
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Solubility(ies)	not determined

Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available
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Vapor pressure	not determined
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Density and/or relative density

Density	0.89 g/cm ³ at 20 °C
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)
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9.2 Other information	there is no additional information
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10 Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

If heated:

Risk of ignition

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

11 Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

May be harmful if swallowed or in contact with skin.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

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Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

12 Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	LC50	>1,000 mg/l	fish	96 h
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	EC50	>1,000 mg/l	aquatic invertebrates	24 h
Hydrocarbons, C11-C13, isoalkanes	246538-78-3	LL50	>1,000 mg/l	fish	24 h
Hydrocarbons, C11-C13, isoalkanes	246538-78-3	EL50	>1,000 mg/l	aquatic invertebrates	24 h
3-methoxy-3-methylbutan-1-ol	56539-66-3	LC50	>100 mg/l	fish	96 h
3-methoxy-3-methylbutan-1-ol	56539-66-3	EC50	>1,000 mg/l	aquatic invertebrates	48 h
3-methoxy-3-methylbutan-1-ol	56539-66-3	ErC50	>1,000 mg/l	algae	48 h
1,1'-[methylenebis(oxy)]dibutane	2568-90-3	EC50	>100 mg/l	aquatic invertebrates	48 h
1,1'-[methylenebis(oxy)]dibutane	2568-90-3	ErC50	>1.3 mg/l	algae	72 h

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Aquatic toxicity (chronic) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	LC50	>300 mg/l	fish	14 d
2-methoxy-1-(2-methoxypropoxy)propane; 2-methoxy-1-[(1-methoxypropan-2-yl)oxy]propane	111109-77-4	EC50	>100 mg/l	microorganisms	30 min
3-methoxy-3-methylbutan-1-ol	56539-66-3	EC50	>100 mg/l	aquatic invertebrates	21 d
1,1'-[methylenebis(oxy)]dibutane	2568-90-3	EC50	>6 mg/l	fish	32 d
1,1'-[methylenebis(oxy)]dibutane	2568-90-3	LC50	>6 mg/l	fish	32 d

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

None of the ingredients are listed.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

None of the ingredients are listed.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

13 Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

14 Transport information

14.1 UN number

not subject to transport regulations

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14.2 UN proper shipping name	not relevant
14.3 Transport hazard class(es)	none
14.4 Packing group	not assigned
14.5 Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations
14.6 Special precautions for user	There is no additional information.
14.7 Transport in bulk according to IMO instruments	The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport information - National regulations - Additional information (UN RTDG)

Not subject to transport regulations: UN RTDG

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

15 Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) not all ingredients are listed (ACTIVE)

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

none of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

none of the ingredients are listed

Clean Air Act

none of the ingredients are listed

Right to Know Hazardous Substance List

- Toxic or Hazardous Substance List (MA-TURA)

none of the ingredients are listed

- Hazardous Substances List (MN-ERTK)

Name of substance	CAS No	References	Remarks
Hydrocarbons, C11-C13, isoalkanes		N	

Legend

N National Institute for Occupational Safety and Health (NIOSH), "Recommendations for Occupational Safety and Health Standards," August 1988, available from NIOSH, Publications Dissemination Office, Division of Standards Development and Technology Transfer

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- Hazardous Substance List (Chapter 323) (PA-RTK)
none of the ingredients are listed
- Hazardous Substance List (RI-RTK)
none of the ingredients are listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	0	no significant risk to health
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

16 Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.1	Trade name: Tennet Lava	Trade name: LAVA	yes

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Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Asp. Tox.	Aspiration hazard
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Hazardous Products Regulations (HPR)
SOR/2022-272: Regulations Amending the Hazardous Products Regulations (GHS, Seventh Revised Edition)
UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H227	Combustible liquid.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.