



VT-322 Sprayable Contact Adhesive

Safety Data Sheet

according to the United Nations GHS (Rev. 10, 2023)

Issue date: 8/21/2021 Revision date: 4/11/2023 Supersedes: 3/23/2022 Version: 2.0

SECTION 1: Identification

1.1. GHS Product identifier

Product form : Mixture
Product name : VT-322 Sprayable Contact Adhesive
UN-No. (ADR) : 1133
Product group : Trade product

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

1.4. Supplier's details

Manufacturer

Vital Technical Sdn. Bhd.
No.93, Jalan Industri 3/3 Rawang Integrated Industrial Park,
48000 Rawang, Selangor, Malaysia.
T +603 60942088 - F +603 60992930

1.5. Emergency phone number

No additional information available

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Flammable liquids, Category 2	H225	On basis of test data
Skin corrosion/irritation, Category 2	H315	Calculation method
Skin sensitisation, Category 1	H317	Calculation method
Reproductive toxicity, Category 2	H361	Calculation method
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	Calculation method
Specific target organ toxicity – Repeated exposure, Category 2	H373	Calculation method
Aspiration hazard Not classified		Calculation method
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411	Calculation method

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects : Highly flammable liquid and vapour, Suspected of damaging fertility or the unborn child, May cause damage to organs through prolonged or repeated exposure, May cause drowsiness or dizziness, Causes skin irritation, May cause an allergic skin reaction, Toxic to aquatic life with long lasting effects.

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)



Signal word (GHS UN)

: Danger

Hazardous ingredients

: P-TERT-BUTYLPHENOL-FORMALDEHYDE RESIN; toluene; HEXANE, MIXTURE OF ISOMERS (CONTAINING LESS THAN 5% N-HEXANE, EC NO. 203-777-6); NAPHTHA (PETROLEUM), HYDROTREATED LIGHT

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Hazard statements (GHS UN)	: H225 - Highly flammable liquid and vapour H315 - Causes skin irritation H317 - May cause an allergic skin reaction H336 - May cause drowsiness or dizziness H361 - Suspected of damaging fertility or the unborn child (Inhalation) H373 - May cause damage to organs (central nervous system, nervous system) through prolonged or repeated exposure (Inhalation) H411 - Toxic to aquatic life with long lasting effects
Precautionary statements (GHS UN)	: P203 - Obtain, read and follow all safety instructions before use. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground and bond container and receiving equipment. P241 - Use explosion-proof equipment. P242 - Use non-sparking tools.

2.3. Other hazards which do not result in classification

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
toluene	CAS-No.: 108-88-3	30 – 50	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
NAPHTHA (PETROLEUM), HYDROTREATED LIGHT	CAS-No.: 64742-49-0	10 – 30	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
HEXANE, MIXTURE OF ISOMERS (CONTAINING LESS THAN 5% N-HEXANE, EC NO. 203-777-6)	-	1 – 10	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
P-TERT-BUTYLPHENOL-FORMALDEHYDE RESIN	CAS-No.: 25085-50-1	1 – 10	Skin Sens. 1, H317

Full text of H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.

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First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects : May cause drowsiness or dizziness.
Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Water spray.

5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapour.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.

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Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

toluene (108-88-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Toluene
IOELV TWA (mg/m ³)	192 mg/m ³
IOELV STEL (mg/m ³)	384 mg/m ³
IOELV STEL (ppm)	100 ppm
Notes	Skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH TWA (ppm)	20 ppm
Remark (ACGIH)	TLV® Basis: CNS, visual & hearing impair; female repro system eff; pregnancy loss. Notations: OTO; A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2021
USA - ACGIH - Biological Exposure Indices	
Local name	TOLUENE
Biological Exposure Indices (BEI)	0.3 mg/g creatinine Parameter: o-Cresol (with hydrolysis) - Medium: urine - Sampling time: End of shift - Notations: B 0.03 mg/l Parameter: Toluene - Medium: urine - Sampling time: End of shift 0.02 mg/l Parameter: Toluene - Medium: blood - Sampling time: Prior to last shift of workweek
Regulatory reference	ACGIH 2021
NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Cyclohexane
IOELV TWA (mg/m ³)	700 mg/m ³
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
USA - ACGIH - Occupational Exposure Limits	
Local name	Cyclohexane
ACGIH TWA (ppm)	100 ppm
Remark (ACGIH)	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2021
USA - ACGIH - Biological Exposure Indices	
Local name	n-HEXANE

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NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)

Biological Exposure Indices (BEI)	0.5 mg/l Parameter: 2,5-Hexanedione (without hydrolysis) - Medium: urine - Sampling time: End of shift
Regulatory reference	ACGIH 2021

Exposure limit values for the other components

cyclohexane (110-82-7)

EU - Indicative Occupational Exposure Limit (IOEL)

Local name	Cyclohexane	
IOELV TWA (mg/m ³)	700 mg/m ³	
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC	

USA - ACGIH - Occupational Exposure Limits

Local name	Cyclohexane	
ACGIH TWA (ppm)	100 ppm	
Remark (ACGIH)	TLV® Basis: CNS impair	
Regulatory reference	ACGIH 2021	

n-hexane (110-54-3)

EU - Indicative Occupational Exposure Limit (IOEL)

Local name	n-Hexane	
IOELV TWA (mg/m ³)	72 mg/m ³	
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC	

USA - ACGIH - Occupational Exposure Limits

Local name	n-Hexane	
ACGIH TWA (ppm)	50 ppm	
Remark (ACGIH)	TLV® Basis: CNS impair; peripheral neuropathy; eye irr. Notations: Skin; BEI	
Regulatory reference	ACGIH 2021	

USA - ACGIH - Biological Exposure Indices

Local name	n-HEXANE	
Biological Exposure Indices (BEI)	0.5 mg/l Parameter: 2,5-Hexanedione (without hydrolysis) - Medium: urine - Sampling time: End of shift	
Regulatory reference	ACGIH 2021	

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection	: Protective gloves
Eye protection	: Safety glasses
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: [In case of inadequate ventilation] wear respiratory protection.

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Personal protective equipment symbol(s)



8.4. Exposure limit values for the other components

cyclohexane (110-82-7)		
EU	Local name	Cyclohexane
EU	IOELV TWA (mg/m ³)	700 mg/m ³
USA - ACGIH	Local name	Cyclohexane
USA - ACGIH	ACGIH TWA (ppm)	100 ppm
USA - ACGIH	Remark (ACGIH)	TLV® Basis: CNS impair

n-hexane (110-54-3)		
EU	Local name	n-Hexane
EU	IOELV TWA (mg/m ³)	72 mg/m ³
USA - ACGIH	Local name	n-Hexane
USA - ACGIH	ACGIH TWA (ppm)	50 ppm
USA - ACGIH	Remark (ACGIH)	TLV® Basis: CNS impair; peripheral neuropathy; eye irr. Notations: Skin; BEI

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow.
Odour	: Characteristic.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: > 68 °C
Flammability	: Highly flammable liquid and vapour.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: < 23 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: Not available
pH	: Not applicable
pH solution	: Not available
Viscosity, kinematic (calculated value) (40 °C)	: > 40 mm ² /s
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: ≈ 0.83
Relative vapour density at 20°C	: Not available
Solubility	: Not available
Viscosity, dynamic	: 400 – 500 cP
Particle size	: Not applicable

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

toluene (108-88-3)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 Inhalation - Rat	> 20 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
pH: Not applicable
Serious eye damage/irritation : Not classified
pH: Not applicable
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Suspected of damaging fertility or the unborn child (Inhalation).
STOT-single exposure : May cause drowsiness or dizziness.

toluene (108-88-3)	
STOT-single exposure	May cause drowsiness or dizziness.

HEXANE, MIXTURE OF ISOMERS (CONTAINING LESS THAN 5% N-HEXANE, EC NO. 203-777-6)

STOT-single exposure	May cause drowsiness or dizziness.
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NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)

STOT-single exposure	May cause drowsiness or dizziness.
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STOT-repeated exposure : May cause damage to organs (central nervous system, nervous system) through prolonged or repeated exposure (Inhalation).

toluene (108-88-3)	
STOT-repeated exposure	May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation).

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NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
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Aspiration hazard : Not classified.

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Viscosity, kinematic	> 40 mm ² /s
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.
Classification procedure (Hazardous to the aquatic environment, long-term (chronic)) : Calculation method

12.2. Persistence and degradability

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Persistence and degradability	Not rapidly degradable
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P-TERT-BUTYLPHENOL-FORMALDEHYDE RESIN (25085-50-1)

Persistence and degradability	Not rapidly degradable
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toluene (108-88-3)

Persistence and degradability	Not rapidly degradable
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HEXANE, MIXTURE OF ISOMERS (CONTAINING LESS THAN 5% N-HEXANE, EC NO. 203-777-6)

Persistence and degradability	Not rapidly degradable
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NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)

Persistence and degradability	Not rapidly degradable
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12.3. Bioaccumulative potential

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Bioaccumulative potential	No additional information available
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12.4. Mobility in soil

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Mobility in soil	No additional information available
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12.5. Other adverse effects

Ozone : Not classified
Other adverse effects : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapours may accumulate in the container.

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SECTION 14: Transport information

In accordance with UN RTDG / IMDG / IATA

UN RTDG	IMDG	IATA
14.1. UN number		
1133	1133	1133
14.2. UN Proper Shipping Name		
ADHESIVES (containing flammable liquid)	ADHESIVES (containing flammable liquid)	Adhesives (containing flammable liquid)
Transport document description		
UN 1133 ADHESIVES (containing flammable liquid), 3, II, ENVIRONMENTALLY HAZARDOUS	UN 1133 ADHESIVES (containing flammable liquid), 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN 1133 Adhesives (containing flammable liquid), 3, II, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)		
3	3	3
		
14.4. Packing group		
II	II	II
14.5. Environmental hazards		
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes
No supplementary information available		

14.6. Special precautions for user

UN RTDG

Limited quantities (UN RTDG) : 5L
Excepted quantities (UN RTDG) : E2
Packing instruction (UN RTDG) : P001, IBC02
Special packing provisions (UN RTDG) : PP1
Portable tank and bulk container special instructions (UN RTDG) : T4
Portable tank and bulk container special provisions (UN RTDG) : TP1, TP8

IMDG

Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
Special packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1, TP8
EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage) : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Stowage category (IMDG) : B
Properties and observations (IMDG) : Adhesives are solutions of gums, resins, etc., usually volatile due to the solvents. Miscibility with water depends upon their composition.

IATA

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341

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PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
Special provisions (IATA)	: A3
ERG code (IATA)	: 3L

14.7. Transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

No additional information available

SECTION 16: Other information

Issue date	: 8/21/2021
Revision date	: 4/11/2023
Supersedes	: 3/23/2022

Abbreviations and acronyms	: CAS-No. - Chemical Abstract Service number ATE - Acute Toxicity Estimate EC50 - Median effective concentration EC-No. - European Community number IATA - International Air Transport Association IMDG - International Maritime Dangerous Goods LC50 - Median lethal concentration LD50 - Median lethal dose LOAEL - Lowest Observed Adverse Effect Level N.O.S. - Not Otherwise Specified NOAEC - No-Observed Adverse Effect Concentration NOAEL - No-Observed Adverse Effect Level NOEC - No-Observed Effect Concentration OEL - Occupational Exposure Limit SDS - Safety Data Sheet
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Full text of H-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Asp. Tox. Not classified	Aspiration hazard Not classified
Flam. Liq. 2	Flammable liquids, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction

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Full text of H-statements:	
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), UN

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.