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## 1. Identification of the substance/preparation and of the company/undertaking

**Product name** : VT-104EP / VT-120 / VT-125 Contact Adhesive

**Product use** : Solvent-based adhesive

**Company** : Vital Technical Sdn. Bhd.  
 No. 93, Jalan Industri 3/3,  
 Rawang Integrated Industrial Park,  
 48000 Rawang, Selangor,  
 Malaysia.

**Telephone** : +603 - 6092 0000  
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## 2. Hazard(s) identification

**Substance/Mixture** : Mixture

**Hazard classification** : Flam. Liq.2

Asp. Tox.1

Skin Irrit.2

Eye Irrit.2

STOT SE 3

Repr.2

STOT RE 2

Aquatic Acute 1

Aquatic Chronic 1

**Pictogram**

: GHS02  Flame

GHS07  Exclamation mark

GHS08  Health hazard

GHS09  Environment

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**Signal word** : Danger

**Hazard statement(s):**

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
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.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s):**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fumes/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

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P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor
P302+P352	IF ON SKIN: Wash with soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

**Other hazards which do not result in classification but contribute to overall hazards:** None known

### 3. Composition/Information on ingredients

Chemical name	CAS No.	EINECS No.	%
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Butanone	78-93-3	201-159-0	70 - 90
Cyclohexane	110-82-7	203-806-2	
Hexane	110-54-3	203-777-6	

#### 4. First-aid measures

**In case of inhalation:**

Remove to fresh air, keep warm and at rest. Contact physician if symptom persists.

**In case of skin contact:**

Remove contaminated clothing. Rinse with copious amount of water and soap. Get medical advice if skin irritation or a rash occurs. Wash clothing before reuse.

**In case of eye contact:**

Contact lenses should be removed. Rinse with copious amount of water immediately. Seek medical advice if eye irritation develops and persists.

**In case of ingestion:**

DO NOT induce vomiting. Rinse mouth thoroughly with water. Get medical attention if a symptom persists.

**Personal protection equipment for first-aiders:**

Pay attention to any potential hazards and use recommended personal protection equipment if potential for exposure exists.

**Most important symptoms and effects, acute and delayed:**

May be fatal if swallowed and enters airways. May cause skin and eye irritation. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child.

#### 5. Fire-fighting measures

**Suitable extinguishing media:**

Alcohol-resistant foam, carbon dioxide, dry chemical.

**Unsuitable extinguishing media:**

None known.

**Specific firefighting procedures:**

Remove undamaged containers from fire area if it is safe to do so. Use extinguishing media that is suitable to local circumstances and surrounding environment.

**Special person protection equipment for firefighters:**

NIOSH-approved self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Specific hazards arising from firefighting:**

Exposure to combustion products may be a hazard to health.

**Thermal decomposition products:**

Carbon dioxide, carbon monoxide, nitrogen oxides, and other irritant gases.

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## 6. Accidental release measures

### **Personal precautions, protective equipment and emergency procedure:**

Use recommended personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

### **Measure for cleaning/collecting:**

Wipe or soak with inert liquid binding material (sand, sawdust, etc.). Scrape away cured material. Dispose the spilt material according to local or national regulations. Section 13 of this safety data sheet provides information regarding certain local or national requirements.

### **Additional information:**

Prevent spillage from entering drainage/sewer systems. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

## 7. Handling and storage

### **Handling:**

Ensure good ventilation during use. Avoid contact with skin and eyes. Do not eat, drink, or smoke when using the product.

### **Storage:**

Ensure containers and cartridges are tightly closed. Store in a dry, well-ventilated area, and protected from direct sunlight with temperature not exceeding 30 °C. Keep away from incompatibles. Refer to section 10 for incompatible materials.

## 8. Exposure controls/personal protection

Components	CAS No.	Form of exposure (Value type)	Control Parameter	Basis
Butanone	78-93-3	8 hours TWA	590 mg/m <sup>3</sup>	Malaysia OSHA
Butanone	78-93-3	8 hours TWA	590 mg/m <sup>3</sup>	US OSHA
Butanone	78-93-3	8 hours TWA	600 mg/m <sup>3</sup>	UK WEL
Butanone	78-93-3	8 hours TWA	445 mg/m <sup>3</sup>	Safe Work Australia
Cyclohexane	110-82-7	8 hours TWA	1,030 mg/m <sup>3</sup>	Malaysia OSHA
Cyclohexane	110-82-7	8 hours TWA	1,050 mg/m <sup>3</sup>	US OSHA
Cyclohexane	110-82-7	8 hours TWA	350 mg/m <sup>3</sup>	UK WEL
Cyclohexane	110-82-7	8 hours TWA	350 mg/m <sup>3</sup>	Safe Work Australia
Hexane	110-54-3	8 hours TWA	176 mg/m <sup>3</sup>	Malaysia OSHA

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Hexane	110-54-3	8 hours TWA	1,800 mg/m <sup>3</sup>	US OSHA
Hexane	110-54-3	8 hours TWA	72 mg/m <sup>3</sup>	UK WEL
Hexane	110-54-3	8 hours TWA	72 mg/m <sup>3</sup>	Safe Work Australia

**Engineering controls:**

Product curing may form hazardous compounds. Ensure adequate ventilation and minimise workplace exposure concentrations.

**Industrial hygiene:**

Remove immediately all contaminated clothing. Do not inhale vapour. Wash hands and contaminated areas with water and soap before leaving the work site. Change clothing before leaving workplace and wash before reuse. Do not eat, drink, or smoke while using product.

**Hand protection:**

Suitable impervious protective gloves (neoprene, nitrile, etc.). Breakthrough time is not tested for this product. Change gloves often if possible.

**Respiratory protection:**

A NIOSH-approved respirator with filter for organic vapours is recommended where local ventilation is not adequate.

**Eye/Face protection:**

Protective goggles/safety glasses.

## 9. Physical and chemical properties

<b>Appearance</b>	: Thixotropic paste
<b>Odour</b>	: Characteristic odour
<b>Odour threshold</b>	: Not determined
<b>pH</b>	: Not applicable
<b>Freezing/Melting point</b>	: Not determined
<b>Boiling point range</b>	: Not determined
<b>Flash point</b>	: <23 °C
<b>Evaporation rate</b>	: Not applicable
<b>Flammability</b>	: Highly flammable
<b>Explosive properties</b>	: Not classified as explosive
<b>Oxidising properties</b>	: Not classified as oxidising
<b>Vapour pressure</b>	: Not applicable
<b>Vapour density</b>	: Not applicable
<b>Relative density</b>	: Approximately 0.79
<b>Solubility in water</b>	: Not determined
<b>N-octanol/water partition coefficient</b>	: Not determined
<b>Decomposition temperature</b>	: Not determined
<b>Viscosity</b>	: Not determined

## 10. Stability and reactivity

**Reactivity:**

No reactive hazards known.

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**Stability:**

Stable under recommended handling and storage conditions.

**Conditions to avoid:**

Avoid sources of ignition.

**Hazardous reactions:**

Hazardous polymerisation will not occur.

**Hazardous decomposition products:**

None known.

**Incompatible materials:**

Strong oxidising agents, acids, and sources of ignition.

## 11. Toxicology information

No specific oral, inhalation or dermal toxicology data is known for this product. Any toxicological data included in this section is based on the data associated with the components.

**Acute oral toxicity, LD<sub>50</sub> (rat):**

Not classified based on available information and/or concentration of components.

Butanone	3,460 mg/kg
Cyclohexane	>5,000 mg/kg
Hexane	15,720 mg/kg

**Acute dermal toxicity, LD<sub>50</sub> (rabbit):**

Not classified based on available information and/or concentration of components.

Butanone	>8,050 mg/kg
Cyclohexane	>2,000 mg/kg
Hexane	>2,000 mg/kg

**Acute inhalation toxicity, LC<sub>50</sub> (4 hours, rat):**

Not classified based on available information and/or concentration of components.

Cyclohexane	>19,070 mg/m <sup>3</sup>
Hexane	17,600 mg/m <sup>3</sup>

**Serious eye damage/eye irritation:**

Classified as eye irritant.

Butanone	Causes eye irritation.
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Cyclohexane	Slightly irritating to eyes.
Hexane	Not eye irritant.

**Skin corrosion/skin irritation:**

Classified as skin irritant.

Butanone	Not skin irritant.
Cyclohexane	Not skin irritant.
Hexane	Causes skin irritation.

**Respiratory/Skin sensitisation:**

Not classified based on available information and/or concentration of components.

Butanone	Not sensitising on skin.
Cyclohexane	Not sensitising on skin.
Hexane	Not sensitising on skin.

**Germ cell mutagenicity:**

Not classified based on available information and/or concentration of components.

Butanone	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Cyclohexane	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Hexane	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .

**Carcinogenicity:**

Not classified based on available information and/or concentration of components.

Cyclohexane	Result not conclusive to classify.
Hexane	Negative carcinogenicity. NOAEL: >5,000 ppm

**Reproductive toxicity:**

Suspected of damaging fertility or the unborn child.

Butanone	No effect on fertility. Maternal toxicity, NOAEC: 1,002 ppm
Cyclohexane	No effect on fertility and foetal development.
Hexane	Maternal toxicity, LOAEC: 5,000 ppm Development toxicity, LOAEC: 200 ppm

**Specific target organ toxicity – single exposure:**

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Classified as having narcotic effects.

Butanone	May cause drowsiness and dizziness.
Hexane	May cause drowsiness and dizziness.

**Specific target organ toxicity – repeated exposure:**

Classified as specific target organ toxicant.

Butanone	Exposure by inhalation on rats for 90 days. NOAEC: 5,014 ppm
Hexane	Exposure by oral on rats for 90 days. NOAEL: 568 mg/kg bw
	May cause damage to the nervous system via inhalation. NOAEC: <500 ppm

**Aspiration toxicity:**

Classified as aspiration hazard.

Cyclohexane	Classified as an aspiration hazard.
Hexane	Classified as an aspiration hazard.

**Likely route of administration:**

Inhalation, skin contact, and ingestion.

**12. Ecological information**

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented below. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits.

**Ecology toxicity:**

Very toxic to aquatic life with long lasting effects.

Butanone Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : 2,993 mg/L Exposure for 48 hours, EC <sub>50</sub> : 308 mg/L Exposure for 72 hours, EC <sub>50</sub> : 1,972 mg/L
Cyclohexane Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : 4.53 mg/L Exposure for 48 hours, EC <sub>50</sub> : 0.93 mg/L Exposure for 72 hours, EC <sub>50</sub> : 9.32 mg/L
Hexane Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : >1,000 mg/L Exposure for 48 hours, EC <sub>50</sub> : >3.5 mg/L Exposure for 10 days, EC <sub>50</sub> : 2.66%

**Persistence and degradability:**

Not likely to be persistent based on available information and/or concentration of components.

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Butanone	Readily biodegradable. Exposure for 28 days, 98% biodegradation.
Cyclohexane	Readily biodegradable. Exposure for 28 days, >60% biodegradation.
Hexane	Readily biodegradable. Exposure for 28 days, 98% biodegradation.

**Bioaccumulative potential:**

No bioaccumulation potential based on available information and/or concentration of components.

Cyclohexane	BCF: 31 - 102
Hexane	BCF: 500

**Mobility in soil:**

No data available.

### 13. Disposal information

**Waste treatment/disposal methods - unused products**

Disposal of waste to be in accordance with the Environmental Quality (Scheduled Wastes) Regulations and other guidelines issuance by DOE and/or local authorities.

**Waste treatment/disposal methods - contaminated packaging**

Dispose of as unused product. Empty container should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**Road transport (UNRTDG):**

UN number : UN1133  
 Proper shipping name : ADHESIVES containing flammable liquid  
 Technical name : Not applicable  
 Hazard class : 3  
 Classification code : F1  
 Packing group : II

**Marine transport (IMDG):**

UN number : UN1133  
 Proper shipping name : ADHESIVES containing flammable liquid  
 Technical name : Not applicable  
 Hazard class : 3  
 EmS : F-E, S-D  
 Packing group : II  
 Marine pollutant : Not marine pollutant

**Air transport (IATA):**

UN number : UN1133  
 Proper shipping name : ADHESIVES containing flammable liquid  
 Technical name : Not applicable  
 Hazard class : 3  
 Packing group : II

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## 15. Regulatory information

### Safety, health, and environmental regulations specific for the hazardous chemical in question:

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2010 (Malaysia)

Occupational Safety and Health (Classification, Labelling, and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 (Malaysia)

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (European Union)

Occupational Safety and Health Administration (OSHA) (2006) Air Contaminants. 29 CFR 1910.1000 (United States of America)

Work Health and Safety Act 2011 (Australia)

EH40/2005 Workplace exposure limits (United Kingdom)

### Chemical inventory status:

Australia AICS	: All ingredients listed or exempt.
Canada DSL	: All ingredients listed or exempt.
China IECSC	: All ingredients listed or exempt.
Japan ENCS	: All ingredients listed or exempt.
Korea KECI	: All ingredients listed or exempt.
Philippines PICCS	: All ingredients listed or exempt.
United States TCSA	: All ingredients listed or exempt.

## 16. Other information

### Definitions:

<b>TWA</b>	: Time-weighted average.
<b>STEL</b>	: Short-term exposure level.
<b>OSHA</b>	: Occupational Safe and Health Act
<b>WEL</b>	: Workplace exposure limits
<b>LD<sub>50</sub></b>	: The minimum dose required for lethal effects in 50% of a given population of test specimens.
<b>ppm</b>	: part per million
<b>bw</b>	: body weight
<b>BCF</b>	: Bioconcentration factor
<b>NOAEL</b>	: No-observed-adverse-effect-level
<b>LOAEL</b>	: Lowest-observed-adverse-effect level
<b>NIOSH</b>	: National Institute for Occupational Safety and Health.
<b>UNRTDG</b>	: United Nations Recommendations on the Transport of Dangerous Goods
<b>IMDG</b>	: International Maritime Dangerous Goods
<b>IATA</b>	: International Air Transport Association
<b>AICS</b>	: Australian Inventory of Chemical Substances
<b>DSL</b>	: Domestic Substance List
<b>ENCS</b>	: Existing and New Chemical Substances.
<b>KECI</b>	: Korea Existing Chemicals Inventory.
<b>ECSN</b>	: Existing Chemical Substance Nomination.
<b>TSCA</b>	: Toxic Substances Control Act

All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The details contained herein are based on our present state of knowledge and experience in characterising our product with regard to any possible

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safety requirement at the date of its publication. We do, however, pass them on without any warranty or property assurances.