

**MICROTAC SYSTEMS PTE LTD****Safety Data Sheet****VT-232****Eco Nails***(Formerly known as 'Low VOC Construction Adhesive')*

Issued date: 21/07/10

Revision date: 04/01/18

Revision No.: 13

1. Identification of the substance/preparation and of the company/undertaking**Product name** : VT-232 Eco Nails**Product use** : Solvent-based adhesive**Company** : Microtac Systems Pte Ltd
71 Ubi Crescent #01-01/02
Singapore 408571**Telephone** : +65 - 6297 7713**Fax** : +65 - 6297 7793**Website** : www.microtacsystems.com.sg**2. Hazard(s) identification****Substance/Mixture** : Mixture**Hazard classification** : Flam.Liq.2

Skin Sens.1

Eye Irrit.2

Repr.2

Aquatic Chronic 3

Pictogram

: GHS02



Flame

GHS07



Exclamation mark

Signal word

: Danger

Hazard statement(s):

H225	Highly flammable liquid and vapour.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s):

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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.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305+P351+P338	IF IN EYES: Rinse cautiously 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.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists get medical advice/attention.
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

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3. Composition/Information on ingredients

Chemical name	CAS No.	EINECS No.	%
Methyl acetate	79-20-9	201-185-2	10 - 30
Rosin esters	8050-31-5	232-482-5	1 - 10
Hexane	110-54-3	203-777-6	1 - 10

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 cause eye irritation and allergic skin reaction. 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.

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Thermal decomposition products:

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

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
Methyl acetate	79-20-9	8 hours TWA	>500 mg/m ³	Malaysia OSHA
Methyl acetate	79-20-9	8 hours TWA	>500 mg/m ³	US OSHA
Methyl acetate	79-20-9	8 hours TWA	>500 mg/m ³	UK WEL
Methyl acetate	79-20-9	8 hours TWA	>500 mg/m ³	Safe Work Australia
Hexane	110-54-3	8 hours TWA	>50 mg/m ³	Malaysia OSHA
Hexane	110-54-3	8 hours TWA	>50 mg/m ³	US OSHA
Hexane	110-54-3	8 hours TWA	>50 mg/m ³	UK WEL
Hexane	110-54-3	8 hours TWA	>50 mg/m ³	Safe Work Australia

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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

Appearance	: Thixotropic paste
Odour	: Characteristic odour
Odour threshold	: Not determined
pH	: Not applicable
Freezing/Melting point	: Not determined
Boiling point range	: Not determined
Flash point	: <23 °C
Evaporation rate	: Not applicable
Flammability	: Highly flammable
Explosive properties	: Not classified as explosive
Oxidising properties	: Not classified as oxidising
Vapour pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: Approximately 1.22
Solubility in water	: Not determined
N-octanol/water partition coefficient	: Not determined
Decomposition temperature	: Not determined
Viscosity	: Not applicable

10. Stability and reactivity**Reactivity:**

No reactive hazards known.

Stability:

Stable under recommended handling and storage conditions.

Conditions to avoid:

Avoid sources of ignition.

Hazardous reactions:

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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, LD₅₀ (rat):

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

Methyl acetate	>2,000 mg/kg
Rosin ester	>2,000 mg/kg
Hexane	>2,000 mg/kg

Acute dermal toxicity, LD₅₀ (rabbit):

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

Rosin ester	>2,000 mg/kg
Hexane	>2,000 mg/kg

Acute inhalation toxicity, LC₅₀ (4 hours, rat):

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

Methyl acetate	>20.0 mg/L
Hexane	>2,000 mg/kg

Serious eye damage/eye irritation:

Classified as an eye irritant.

Methyl acetate	Causes eye irritation.
Rosin ester	Causes eye irritation.
Hexane	Not eye irritant.

Skin corrosion/skin irritation:

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

Hexane	Causes skin irritation.
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Rosin ester	Not skin irritant.
Methyl acetate	No skin irritation.

Respiratory/Skin sensitisation:

Not classified as respiratory sensitiser, but may cause an allergic skin reaction.

Methyl acetate	Not sensitising on skin.
Rosin ester	Sensitising on skin.
Hexane	Not sensitising on skin.

Germ cell mutagenicity:

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

Methyl acetate	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Rosin ester	Negative genotoxicity <i>in vitro</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.

Methyl acetate	Negative carcinogenicity.
Hexane	Negative carcinogenicity. NOAEL: >5,000 ppm

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

Rosin ester	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:

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

Hexane	May cause drowsiness and dizziness.
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Specific target organ toxicity – repeated exposure:

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

Methyl acetate	Exposure for 28 days by inhalation on rats. NOAEL: 350 ppm
Hexane	May cause damage to the nervous system via inhalation.

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Aspiration toxicity:

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

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:

Harmful to aquatic life with long lasting effects.

Methyl acetate
Toxicity to fish
Toxicity to crustacean
Toxicity to algae or other aquatic plants

Exposure for 96 hours, LC₅₀: >250 mg/L
Exposure for 48 hours, EC₅₀: >1,000 mg/L
Exposure for 72 hours, EC₅₀: >100 mg/L

Rosin ester
Toxicity to fish
Toxicity to crustacean
Toxicity to algae or other aquatic plants

Exposure for 96 hours, LC₅₀: >400 mg/L
Exposure for 48 hours, EC₅₀: >2,000 mg/L
Exposure for 72 hours, EL₅₀: >100 mg/L

Hexane
Toxicity to fish
Toxicity to crustacean
Toxicity to algae or other aquatic plants

Exposure for 96 hours, LC₅₀: >1,000 mg/L
Exposure for 48 hours, EC₅₀: >3.5 mg/L
Exposure for 10 days, EC₅₀: 2.66%

Persistence and degradability:

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

Methyl acetate

Readily biodegradable.
Exposure for 28 days, 68% biodegradation.

Rosin ester

Not readily biodegradable.
Exposure for 28 days, 46% biodegradation.

Hexane

Readily biodegradable.
Exposure for 28 days, 98% biodegradation.

Bioaccumulative potential:

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

Hexane

BCF: 500

Mobility in soil:

No data available.

13. Disposal information

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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

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.

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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:**

TWA : Time-weighted average.
STEL : Short-term exposure level.
OSHA : Occupational Safe and Health Act
WEL : Workplace exposure limits
LD₅₀ : The minimum dose required for lethal effects in 50% of a given population of test specimens.
ppm : part per million
bw : body weight
BCF : Bioconcentration factor
NOAEL : No-observed-adverse-effect-level
LOAEL : Lowest-observed-adverse-effect level
NIOSH : National Institute for Occupational Safety and Health.
UNRTDG : United Nations Recommendations on the Transport of Dangerous Goods
IMDG : International Maritime Dangerous Goods
IATA : International Air Transport Association
AICS : Australian Inventory of Chemical Substances
DSL : Domestic Substance List
ENCS : Existing and New Chemical Substances.
KECI : Korea Existing Chemicals Inventory.
ECSN : Existing Chemical Substance Nomination.
TSCA : 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 safety requirement at the date of its publication. We do, however, pass them on without any warranty or property assurances.