 K-FLEX	K-FLEX MALAYSIA SDN. BHD.
	Safety Data Sheet
	K-Flex K-414 Glue

Issued date: 20/09/17

Revision date: 10/07/2024

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1 IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

1.1. Product identifier

Product name : K-FLEX K-414 ADHESIVE BLACK

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

Supplier : K-FLEX Malaysia Sdn. Bhd.
 Lot 2725, Jalan Raja Nong,
 Taman Klang Jaya,
 41200 Klang, Selangor, Malaysia.
 Phone Number: +603 5162 7899
 Fax Number: +603 5162 3799
 Emergency Telephone Number : +603 5162 7899

2 HAZARDS IDENTIFICATION

2.1. Classification of the hazardous chemical

Classification according to Industry Code of Practice on chemicals classification and hazard communication (2019)

Flamable Liquid, Category 2	H225
Skin Irritation, Category 2	H315
Skin Sensitation, Category 1	H317
Reproductive toxicity, Category 2	H361
Specific Target Organ toxicity – Single exposure, Category 3	H336
Specific Target Organ toxicity – Repeated exposure, Category 2	H373
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

2.2 Label Elements

Labelling according to Industry Code of Practice on chemicals classification and hazard communication (2019)


Hazard pictograms (GHS MY)



Signal Word (CLP) : DANGER

Contains : rosin; colophony; reaction product of formaldehyde and butylphenol; toluene; NAPHTHA (PETROLEUM), HYDROTREATED LIGHT

Hazard statements (GHS MY) : 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. Suspected of damaging the unborn child. (inhalation).
 H373 - May cause damage to organs (nervous system, central nervous system) through prolonged or repeated exposure (inhalation).
 H411 - Toxic to aquatic life with long lasting effects.

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Precautionary statements (GHS MY)

- : 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/bond container and receiving equipment.
- P241 - Use explosion-proof electrical/ventilating/lighting equipment.

2.3 Precautionary Statements

2.3.1 Precautionary Statements - Prevention

- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P233 - Keep container tightly closed
- P240 - Ground/bond 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/ vapors/ spray
- P264 - Wash hands thoroughly after handling
- P271 - Use only outdoors or in a well-ventilated area
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

2.3.2 Precautionary Statement - Response

- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
- P321 - Specific treatment
- P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
- P337 + P313 - If eye irritation persists: Get medical advice/ attention
- P363 - Wash contaminated clothing before reuse
- P370 + P378 - In case of fire: Use appropriate extinguishant

2.3.3 Precautionary Statement - Storage


- 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

2.3.4 Precautionary Statement - Disposal

- P501 - Dispose of contents/ container to an approved waste disposal plant

2.4 Hazards not otherwise classified (NHOC)

No additional information available.

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3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
toluene	(CAS-No.) 108-88-3	30 – 50	Flam. Liq. 2, H225 Acute Tox. Not classified (Oral) Acute Tox. Not classified (Dermal) Acute Tox. Not classified (Inhalation:dust,mist) Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
NAPHTHA (PETROLEUM), HYDROTREATED LIGHT	(CAS-No.) 64742-49-0	30 – 50	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
reaction product of fomaldehyde and butylphenol	(CAS-No.) 91673-30-2	1 – 10	Skin Sens. 1, H317
rosin; colophony	(CAS-No.) 8050-09-7	0.1 – 1	Skin Sens. 1, H317

Note: Refer to Section 16 for full phrases

4 FIRST-AID MEASURES

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

4.2 Most important symptoms and effects, both 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 any immediate medical attention and special treatment needed.

Treat symptomatically.

5 FIREFIGHTING MEASURES

5.1 Extinguishing media

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

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5.2 Special hazards arising from the substance or mixture.

Fire hazard : Highly flammable liquid and vapour.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3 Advice for firefighters

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

EAC code : •3YE

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 material 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.

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.

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.

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8 EXPOSURE CONTROLS/PERSONAL PROTECTION


8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Toluene (108-88-3)	
Malaysia - Occupational Exposure Limits	
Local name	Toluena (Toluol) # Toluene (Toluol)
PEL TWA (mg/m ³)	188 mg/m ³
PEL TWA (ppm)	50 ppm
Remark (MY)	(kulit # skin)
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH TWA (ppm)	20 ppm
Remark (ACGIH)	TLV® Basis: Visual impair; female repro; pregnancy loss. Notations: A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2020
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 2020

NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)	
Malaysia - Occupational Exposure Limits	
Local name	Sikloheksana # Cyclohexane
PEL TWA (mg/m ³)	1030 mg/m ³
PEL TWA (ppm)	300 ppm
Remark (MY)	(kulit # skin)

rosin; colophony (8050-09-7)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m ³)	≈ 0.05 mg/m ³
WEL STEL (mg/m ³)	≈ 0.15 mg/m ³

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Exposure limit values for the other components

n-hexane (110-54-3)	
Malaysia - Occupational Exposure Limits	
Local name	n-Heksana # n-Hexane
PEL TWA (mg/m ³)	176 mg/m ³
PEL TWA (ppm)	50 ppm
Remark (MY)	(kulit # skin)
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 2020
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 2020

cyclohexane (110-82-7)	
Malaysia - Occupational Exposure Limits	
Local name	Sikloheksana # Cyclohexane
PEL TWA (mg/m ³)	1030 mg/m ³
PEL TWA (ppm)	300 ppm
USA - ACGIH - Occupational Exposure Limits	
Local name	Cyclohexane
ACGIH TWA (ppm)	100 ppm
Remark (ACGIH)	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2020

8.2. Monitoring


No additional information available

8.3. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

8.4. Personal protective equipment

Hand protection : Protective gloves
 Eye protection : Safety glasses

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Skin and body protection

: Wear suitable protective clothing

Respiratory protection

: [In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s) :



Environmental exposure controls


: Avoid release to the environment.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid
Appearance	: No data available
Colour	: Black
Odour	: Characteristic
Odour threshold	: No data available
pH	: Not applicable
Melting point, Freezing point	: Melting point: Not applicable
Boiling point	: > 68 °C
Flash point	: 22 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Explosive limits	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: Relative density: ≈ 0.84
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: > 40 mm ² /s
Viscosity, dynamic	: 5000 – 7000 cP

10 STABILITY AND REACTIVITY

Reactivity	: Highly flammable liquid and vapour.
Chemical stability	: Stable under normal conditions
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use
Conditions to avoid	: Avoid contact with hot surfaces, Heat, No flames, no sparks. Eliminate all sources of ignition
Incompatible materials	: No data available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced

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11 TOXICOLOGY 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. Suspected of damaging the unborn child. (if inhaled).
 STOT-single exposure : May cause drowsiness or dizziness.

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

NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs (nervous system, central nervous system) through prolonged or repeated exposure.


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

NAPHTHA (PETROLEUM), HYDROTREATED LIGHT (64742-49-0)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified.

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.

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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone

: Not classified

Other adverse effects

: No additional information available

13 DISPOSAL INFORMATION

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.

14 TRANSPORT INFORMATION

14.1. UN number

UN-No.(UN RTDG)

: 1133

UN-No. (IMDG)

: 1133

UN-No. (IATA)

: 1133

14.2. Proper Shipping Name

Proper Shipping Name (UN RTDG)

: ADHESIVES (containing flammable liquid)

Proper Shipping Name (IMDG)

: ADHESIVES (containing flammable liquid)

14.3. Transport hazard class(es)

UN RTDG

Transport hazard class(es) (UN RTDG)

: 3

Danger labels (UN RTDG)

: 3

:



IMDG

Transport hazard class(es) (IMDG)

: 3

Danger labels (IMDG)

: 3

:



IATA

Transport hazard class(es) (IATA)


: 3

Danger labels (IATA)

: 3

:



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14.4. Packing group

Packing group (UN RTDG) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : 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
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 Annex II of MARPOL 73/78 and the IBC Code

Not applicable

14.8. Hazchem or Emergency Action Code

EAC code : •3YE.

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15 REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

15.2. Chemical safety assessment

No additional information available

16 OTHER INFORMATION

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Full text of H-statements:

Acute Tox. Not classified (Dermal)	Acute toxicity (dermal) Not classified
Acute Tox. Not classified (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Not classified
Acute Tox. Not classified (Oral)	Acute toxicity (oral) Not classified
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
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), Malaysia

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.