

MATERIAL SAFETY DATA SHEET

Product Name	ADHESIVES
	KS-1

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company's Name	CHILSUNG POLYMER CO.,LTD
Company's State	#27 GEUMAM-RI, SEOTAN-MYEON, PYEONGTAEK-SI, GYEONGGI-DO, KOREA
	Tel 82-31-664-3849
	Fax 82-31-664-2449
Company's Country	KOREA
Company's Zip Code	451-852
Company's Emerg Phone	82-31-664-3849
Company's Info Phone	82-31-664-3849
Substance	ADHESIVES
Trade names	KS-1
Issue Date	May-15-2015
Revision Date	Oct-04-2016

SECTION 2 HAZARDS IDENTIFICATION

1. Hazards identification classification

Flammable liquid	CATEGORY 2
Skin Corrosion/Irritation	CATEGORY 2
Serous Eyes Damage/Eye Irritation	CATEGORY 2
Germ cell mutagenicity	CATEGORY 1A
Specific target organ toxicity (Single exposure)	CATEGORY 1,3
Specific target organ toxicity (Repeated exposure)	CATEGORY 1
Aspiration hazard	CATEGORY 1

2. Label elements and precautionary statement

2-1. Pictograms(GHS)



2-2. A signal word

Danger

2-3. Hazard statement

H225 Highly flammable liquid and vapor
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H317 May cause allergic skin reaction
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H360 May damage fertility or the unborn child
H370 Causes of damage to (...)the body
H372 May casue damage to the body of the prolonged or repeated exposure

2-4. Precautionary statements

Precautionary statements

(Prevention)

P201 Obtain special instruction before use
P202 Do not handle until all safety precautions have been read and understood
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
P260 Do not breathe dust/fume/gas/mist/vapors/spray
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P280 Wear protective gloves/protective clothing/eye protection/face protection
P281 Use personal protective equipment as required

Precautionary statements

(Response)

P301+P310 If swallowed : Immediately call a posion center or doctor/physician
P302+P352 If on skin : Rinse skin with 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 victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 If on eyes : Rinse eyes with water
P307+P311 If exposed : Immediately call a posion center or doctor/physician
P308+P313 If exposed or concerned : Get medical advice/attention
P312 If you feel unwell : call a poison center or doctor/physician
P314 Get medical advice/attention if you feel unwell
P331 Do not induce vomiting
P332+p313 If your skin unwell : Get medical advice/attention
P337+P313 If your eyes unwell : Get medical advice/attention
p362 Take off contaminated clothing and wash before reuse
P370+P378 In case of fire : Use form extinction
p391 Please collect spillage

Precautionary statements

(Storage)

P403+P233 Store in a well-ventilated place. Keep lock
P403+P235 Store in a well-ventilated place. Keep cool
P405 Store locked up

Precautionary statements

(Disposal)

P501 Dispose of contents and container in accordance with local regulations

Other hazard-Risk which are not included in the

classification criteria(e.g. explosion hazard)

	TOLUENE	ACETONE	METHYL ETHYL KETONE	POLYURETHANE RESIN
Health	2	1	1	1
Fire	3	3	3	1
Reactivity	0	0	0	0

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	CONTENT
TOLUENE	108-88-3	10~20%
ACETONE	67-64-1	30~40%
METHYL ETHYL KETONE	78-93-3	30~40%
POLYURETHANE RESIN	26354-06-3	15~25%

SECTION 4 FIRST AID MEASURES

Eye contact

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains
Get medical attention immediately

Skin contact

Remove contaminated clothing, jewelry, and shoes immediately
Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes)
Get medical attention, if needed

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing
Use a bag valve mask or similar device to perform
Artificial respiration(rescue breathing) if the victim needed
Get medical attention

Ingestion

Contact local poison control center or physician immediately
Prevent blocking airway up.
When vomiting occurs, keep head lower than hips to help prevent aspiration
If person is unconscious, turn head to side
Get medical attention immediately

SECTION 5 FIRE-FIGHTING MEASURES

Fire and explosion hazards	Severe fire hazard. Vapor/air mixtures are explosive above flash point
Suitable extinguishing media	Regular dry chemical, carbon dioxide, water, regular foam
Large fires	Use regular foam or flood with fine water spray
Fire fighting	<p>Move container from fire area if it can be done without risk</p> <p>Cool containers with water spray until well after the fire is out</p> <p>Stay away from the ends of tanks</p> <p>For fires in cargo or storage area : Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out</p> <p>If this is impossible then take the following precautions : Keep unnecessary people away, isolate hazard area and deny entry</p> <p>Let the fire burn</p> <p>Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire</p> <p>For tank,rail car or tank truck : Evacuation radius : 800 meters (1/2 mile)</p> <p>Do not attempt to extinguish fire unless flow of material can be stopped first</p> <p>Flood with fine water spray</p> <p>Do not scatter spilled material with high-pressure water streams</p> <p>Cool containers with water spray until well after the fire is out</p> <p>Apply water from a protected location or from a safe distance</p> <p>Avoid inhalation of material or combustion by-products</p> <p>Stay upwind and keep out of low areas</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

Occupational release (emergency procedures)	<p>Avoid heat, flames, sparks and other sources of ignition</p> <p>Stop leak if possible without personal risk</p> <p>Reduce vapors with water spray. Small spill : Absorb with sand or other non-combustible material</p> <p>Collect spilled material in appropriate container for disposal</p> <p>Large spills : Dike for later disposal</p> <p>Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry</p>
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SECTION 7 HANDLING AND STORAGE

1.Handling	<p>Keep away from heat/sparks/open flame/hot surfaces -No smoking</p> <p>Take measures to prevent the build up of electrostatic charge</p> <p>Prevent generation of vapor or mist</p> <p>Handling is performed in a well-ventilated place</p>
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2.Storage

Store and handle in accordance with all current regulations and standards

Keep separated from incompatible substances

Store locked up. Store away from incompatible materials such as oxidizing agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit

ACGIH TLV(TWA) :

TOLUENE	TWA - 50ppm 188mg/m ³ STEL - 150ppm 560mg/m ³
ACETONE	TWA - 500ppm 1188mg/m ³ STEL - 750ppm 1782mg/m ³
METHYL ETHYL KETONE	TWA - 200ppm 590mg/m ³ STEL - 300ppm 885mg/m ³
POLYURETANE RESIN	No Data

OSHA PEL(TWA) : Not available

TOLUENE	TWA 50 ppm
ACETONE	TWA 500 ppm , STEL 750 ppm
METHYL ETHYL KETONE	TWA 200 ppm , STEL 300 ppm
POLYURETANE RESIN	No Data

Ventilation

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present

Ensure compliance with applicable exposure limits

Eye protection

Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area

Clothing

Wear appropriate chemical resistant clothing

Impervious protective clothing. Protective boots, if the situation requires

Gloves

Wear appropriate chemical resistant gloves

Impervious gloves

Respirator

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA

500 ppm

Any self-contained breathing apparatus

Any supplied-air respirator

1250 ppm

Any supplied-air respirator

2500 ppm

Any self-contained breathing apparatus with a full facepiece

Any supplied-air respirator with a full facepiece

Any supplied-air respirator with a full facepiece

50000 ppm

Any supplied-air respirator with a full facepiece that is operated in pressure-demand or other positive-pressure mode

Escape -

: Any air-purifying respirator with a full facepiece and an organic vapor canister

: Any appropriate escape-type, self-contained breathing apparatus

: For Unknown Concentrations or Immediately Dangerous to Life or

Health - Any supplied - air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply

: Any self-contained breathing apparatus with a full facepiece

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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Physical state	Liquid
Appearance	Clear
Color	Translucent Gray
Odor	No data
Boiling point/Range	85°C
Melting/Freezing point	No data
Flash point	-7°C
Vapor pressure	No data
Explosive limits	No data
Specific gravity	0.85
Water solubility	Insolubility
pH	No data
Coefficient of water/oil distribution	No data
Auto ignition temperature	No data
Viscosity	5,000 cP

TOLUENE

Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Benzene Odor
Boiling point/Range	111°C
Melting/Freezing point	-95°C
Flash point	4°C
Vapor pressure	28.4mmHg (25°C)
Explosive limits	7.1/1.1%
Specific gravity	0.8636
Water solubility	0.0526 g/100mL (25°C)
pH	No data
Coefficient of water/oil distribution	2.73
Auto ignition temperature	480°C
Viscosity	0.56 cP

ACETONE

Physical state	Liquid
Appearance	Clear

Color	No data
Odor	Sweet-odor 2)
Boiling point/Range	56.1°C (760 mmHg)
Melting/Freezing point	-17°C (c.c.)
Flash point	No data
Vapor pressure	24 kPa (20°C)
Explosive limits	13/2.2 %
Specific gravity	0.8
Water solubility	No data
pH	No data
Coefficient of water/oil distribution	-0.24
Auto ignition temperature	465°C
Viscosity	0.303 cP (25°C)

METHYL ETHYL KETONE

Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Sweet-odor
Boiling point/Range	80°C
Melting/Freezing point	-86°C
Flash point	-9°C (c.c)
Vapor pressure	90.6mmHg (25°C)
Explosive limits	11.5/1.8%
Specific gravity	0.8
Water solubility	29 g/100mℓ (25°C)
pH	No data
Coefficient of water/oil distribution	0.29
Auto ignition temperature	505°C
Viscosity	0.40 cP (25°C)

Polyurethane Resin

Physical state	Soild
Appearance	Clear
Color	Colorless to Yellowish brown
Odor	odorless
Boiling point/Range	No data
Melting/Freezing point	No data
Flash point	No data
Vapor pressure	No data
Explosive limits	No data
Specific gravity	1.16-1.22
Water solubility	Insolubility
pH	No data
Coefficient of water/oil distribution	No data
Auto ignition temperature	No data
Viscosity	No data

SECTION 10 STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	Stable under normal conditions
Conditions to avoid	Avoid the fire, spark, flame, and other ignition sources The fume has an explosive characteristic. Avoid the overheating of container.
Incompatible materials	Flammable material
Hazardous decomposition products	CO, CO ₂ , nitrogen compounds

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	No data
Acute Dermal Toxicity	No data
Serious eye damage/irritation	No data
Single Dose Toxicity	Can affect the central nervous system, the heart may cause increased mucus
Repeated Dose Toxicity	May cause dermatitis upon prolonged exposure to the skin, nervous system, liver, affect the heart
Germ cell Mutagenicity	EU CLP : 1B
Effect on Next generation (Reproductive Toxicity)	No data
Carcinogenicity	IARC : No data available, NTP : No data available, EU CLP : No data available
Additional Advice	No data

SECTION 12 ECOLOGICAL INFORMATION

Eco toxicity	Fish: Crustacea : Algae :
Mobility in soil	No data
Persistence/Degradability	No data
Possibility of Accumulation in Animal Body	No data
Bio accumulative	No data

SECTION 13 DISPOSAL CONSIDERATIONS

Regulations of Waste Management	Recycle to process if possible Consult your local regional authorities You may be able to burn in a chemical incinerator equipped with an after burner and scrubber system but exert extra care in igniting as this material is highly flammable
Disposal Method	Dispose in accordance with all applicable regulations

SECTION 14 TRANSPORT INFORMATION

Shipping name-UN number	UN 1133 (ADHESIVES)
Hazard identification no.	3

Packing group

II

Ems

F-E, S-D

SECTION 15 REGULATORY INFORMATION

Industrial safety and health Act

Article 39 Article 41

Toxic chemical control Act

Not applicable

SECTION 16 OTHER INFORMATION

Not included classification standards consider harmful/dangerousness(NFPA)

Final revised : Oct-04-2016

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety.