Implementation: 2015-6-10
Revision: 2020-2-1

SAFETY DATA SHEET(SDS)

1. Product and company(manufacturer) identification

Product: ESLON Adhesive No.20S

Manufacturer: Sekisui Chemical Co., Ltd.

Address: Toranomon 2-10-4, Minato-ku, Tokyo 105-8566

Responsible section: Urban Infrastructure & Environmental Products Company
Pipe Systems Division

Telephone: +81-3-6748-6492

Urgent telephone: +81-3-6748-6492

Fax: +81-3-6748-6564

Urgent contact: same as above

Application & restriction Adhesive for rigid PVC piping system
Other applications are prohibited.

Document number: #20S

2. Hazards identification

GHS Classification

Physicochemical hazards:	Explosives	Not applicable
	Flammable gases (including chemically unstable gases)	Not applicable
	Aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Category 2
	Flammable solids	Not applicable
	Self-active chemicals	Not applicable
	Pyrophoric liquids	Not Classified
	Pyrophoric solids	Not applicable
	Self-heating chemicals	Classification Not Possible
	Chemicals which, in contact with water, emit flammable gases	Not applicable
	Oxidizing liquids	Not applicable
	Oxidizing solids	Not applicable
	Organic peroxides	Not applicable
	Substances corrosive to metals	Not Classified
Health hazards:	Acute toxicity (oral)	Classification Not Possible
	Acute toxicity (dermal)	Classification Not Possible
	Acute toxicity (inhalation: gas)	Not applicable
	Acute toxicity (inhalation: vapor)	Category 4
	Acute toxicity (inhalation: dust and mist)	Classification Not Possible
	Skin corrosion/irritation	Category 2
	Eye damage/irritation	Category 2A
	Respiratory sensitization	Classification Not Possible
	Skin sensitization	Classification Not Possible
	Germ cell mutagenicity	Classification Not Possible
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity (single exposure)	Category 1 (Central nervous system) Category 2(Kidneys) Category 3 (nacrotic effect, respiratory tract irritancy)
	Specific target organ toxicity (repeated exposure)	Category 1 (liver, respiratory, central nervious system, nervous system)
	Aspiration hazard	Not Classified

Environmental hazards:

Hazard to the aquatic environment(Acute hazard)	Not Classified
Hazard to the aquatic environment(Long-term hazard)	Not Classified
Hazard to the ozone layer	Classification Not Possible

Pictogram or symbol:

Signal word: Danger

Hazard statement:

(H225)Highly flammable liquid and vapour.
(H315)Causes skin irritation.
(H319)Causes serious eye irritation.
(H332)Harmful if inhaled.
(H335)May cause respiratory irritation.
(H336)May cause drowsiness or dizziness.
(H351)Suspected of causing cancer.
(H361)Suspected of damaging fertility or the unborn child.
(H370)Causes damage to organs(central nervous system).
(H371)May cause damage to organs(kidneys).
(H372)Causes damage to organs(liver, respiratory, nervous system, central nervous system) through prolonged or repeated exposure.

Precautionary statement:

Obtain special instructions before use.(P201)
Do not handle until all safety precautions have been read and understood.(P202)
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.(P210)
Keep container tightly closed.(P233)
Ground/bond container and receiving equipment.(P240)
Use explosion-proof electrical/ventilating/lighting/ equipment.(P241)
Use only non-sparking tools.(P242)
Take precautionary measures against static discharge.(P243)
Do not breathe dust/fume/gas/mist/vapours/spray.(P260)
Avoid breathing dust/fume/gas/mist/vapours/spray.(P261)
Wash thoroughly after handling.(P264)
Do not eat, drink or smoke when using this product.(P270)
Use only outdoors or in a well-ventilated area.(P271)
Wear protective gloves/protective clothing/eye protection/face protection.(P280)
IF ON SKIN: Wash with plenty of soap and water.(P302+P352)
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.(P303+P361+P353)
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.(P304+P340)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.(P305+P351+P338)
IF exposed or concerned: Get medical advice/attention.(P308+P313)
Call a POISON CENTER or doctor/physician if you feel unwell.(P312)
Get medical advice/attention if you feel unwell.(P314)
Specific treatment (see label).(P321)
If skin irritation occurs: Get medical advice/attention.(P332+P313)
If eye irritation persists: Get medical advice/attention.(P337+P313)
Take off contaminated clothing and wash it before reuse.(P362+P364)
In case of fire: Use for extinction:(P370+P378)
Store in a well-ventilated place. Keep container tightly closed.(P403+P233)
Store in a well-ventilated place. Keep cool.(P403+P235)
Store locked up.(P405)
Dispose of contents/container in accordance with local/regional/national/international regulations.(P501)

3. Composition/information on ingredients

Nature of composition: **Mixture**

Chemical or common name: **Adhesive, containing PMMA**

Component	Content	CAS Number	Reference Number in Gazetted List in Japan	Others
Tetrahydrofuran	35 to 45 %	109-99-9	(5)-53	
Methyl ethyl ketone	35 to 45 %	78-93-3	(2)-542	
Resin (PMMA.)	10 to 20 %	Undisclosed	Undisclosed	

4. First-aid measures

If vapor is inhaled:
Take the affected person to a clean-air space and give him rest in a easy-breathing pose.
Seek physician's counsel as may be needed.

If touched to skin:
Wash the skin immediately with a lot of water and soap.
Take off the contaminated clothing's for cleaning.
Seek physicians counsel if he suffers from irritation or drowsiness.

If gets in eye:
Thoroughly wash the eye with clean water for a several minutes. Remove contact lens if easily removable. Continue washing after removal.
Seek physician's counsel.

If swallowed:
Immediately wash the mouth with water.
Immediately seek physician's counsel.
Rinse the mouth well and drink a lot of water to vomit.

Anticipated acute & chronic symptoms:
Irritation to respiratory organs, cough and gasp, when inhaled.
Irritation to digestive organs, bake, vomit and diarrhea, when swallowed.
Skin irritation, defatting, eye irritation, reddening and ache, when contacted.
Anesthesia, headache, drowsiness, restricted vision, vomit, diarrhea and loss of consciousness, when over-exposed to vapor.

Protection of first-aid provider:
First-aid provider should use protective wears such as organic solvent mask, when the circumstances require.

Special note to physician:
No information

5. Fire-fighting measures

Extinguishing agents:
Carbon dioxide, powder agent, foam agent

Prohibited extinguishing agent:
Water flux

Specific hazards:
Fire may cause to generate irritant, toxic or erosive gas.
Easily flammable. It will readily be ignited by heat, spark or flame.
Heating of container may cause explosion.
Easily inflammable liquid and vapor.

Proper extinguishing method:
Remove surrounding combustibles and use extinguishing agents.
Use foam agent to choke a large scale fire.
Spray water over the neighborhood to cool and prevent fire spread.
Fight against fire standing to its windward as much as possible and wear Respirator if necessary.

6. Accidental release measures

Health hazard precaution, protective wear and first-aid
Workers should use protective wears (See Chapter 8) to prevent contact with the spilt adhesive and inhalation of its vapor.
Rope off the crowd from the leak spot.
Work from the windward and evacuate the leeward crowd.
In case of indoor leakage, ventilate as much as possible until the cleaning is completed.

Environmental hazard precaution:
Prevent flow out to river, etc. so as not to badly affect the environment.

Recovery and neutralization:
For small scale leakage, use absorbent (sawdust, dirt, sand, waste rug) to remove most of the spill and wipe off the rest using waste rug.
For large scale leakage, build bank around the spill and lead the liquid to a safer place for recovery.

Prevention of secondary casualty:
Quickly remove all the combustibles from around the leak spot and provide extinguishers ready for use.

7. Handling and storage precautions

Handling

Technical measures: Use protective wears if inhalation or skin contact is foreseen.
Fire ban.

Local & total ventilation: Handling work must be practiced in a room where local or total ventilation facility is functioning.

Safe handling: Ban of high temperature substance, sparking and fire at nearby points.
Prohibition of eating, drinking and smoking while the product is used.
Wash hands well after handling.
Avoid contact of the product with eye, skin and clothing.
Do not inhale vapor, mist and spray of the product.
Handle it only after reading and understanding all the precautions.
Use the product only in a well ventilated room or outdoors.

Storage

Storing conditions: Store in a remote room from heat, sparks and naked flame. No smoking in the storage room.
Store in a cool, ventilated room.
Lock the storage room.

8. Exposure controls and personal protection

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent vapor inhalation.

	Tetrahydrofuran	Methyl ethyl ketone
Control concentration:	50 ppm	200 ppm
Permissible concentration (Exposure limit, Biological exposure guide line)		
Japan society for occupational health.	50 ppm	200 ppm
ACGIH TLV-TWA	50 ppm	200 ppm

Protective wears:

Respiratory protection: Use aspirator with appropriate filter
Hand protection: Impermeable gloves
Eye protection: Solvent-resistant goggles
Skin and body protection: long-sleeve fatigue uniform
Hygienic measures: Wash hands well after handling.

9. Physical and chemical properties

Physical state, form, color: Colorless transparent liquid
Odor: Characteristic stimulative odor
pH: Not applicable
Bp, initial bp & boiling range 65.4℃ (bp)
Flash point: -17℃ (Closed Method)
Specific gravity (density): 0,90
Auto ignition point: 320℃
Viscosity: c. 380 mPa-s

10. Stability and reactivity

Stability: Stable under normal conditions and handling.
Possibility of hazardous reaction: Vigorously reacts with strong oxidizing agents and ignites.
Prohibitive conditions: Heat
Prohibitive contact: With oxidizing agent
Hazardous decomposed substances: Generates Aldehyde, Acid and Organic matter by thermal decomposition.

11. Hazard information

Acute toxicity:

(Appended Table)

	Content	Acute toxicity (oral)	Acute toxicity (dermal)	Acute toxicity (inhalation: gas)	Acute toxicity (inhalation: vapor)	Acute toxicity (inhalation: dust and mist)
Tetrahydrofuran	35 to 45 %	Category 4 (1851mg/kg)	Classification Not Possible	Not applicable	Category 4 (21000ppm)	Classification Not Possible
Methyl ethyl ketone	35 to 45 %	Not Classified (> 2000mg/kg)	Not Classified (>5000mg/kg)	Not applicable	Category 4 (11700ppm)	Classification Not Possible
Resin (PMMA)	10 to 20 %	Classification Not Possible	Classification Not Possible	Classification Not Possible	Classification Not Possible	Classification Not Possible

Acute toxicity(oral): The product contains substances of acute toxicity (oral) of Categories indicated in Appended Table. The dose is calculated for the mixture (the product) to be ATE mix=2121 mg/kg.
The product, as a mixture, falls Not Classified.

Acute toxicity(dermal): The product contains substances of acute toxicity (transdermal) of Categories indicated in Appended Table. The dose is calculated for the mixture (the product) to be ATE mix=5000 mg/kg.
The product, as a mixture, falls Not Classified.

Acute toxicity(inhalation: vapor): The product contains substances of acute toxicity (vapor inhalation) of Categories indicated in Appended Table. The dose is calculated for the mixture (the product) to be ATE mix=14240mg/kg.
The product, as a mixture, falls in Category 4.

Skin corrosion/irritation: The product contains skin-irritating substances of the following Categories:

Category 2: tetrahydrofuran (35 to 45 %), methyl ethyl ketone (35 to 45 %).

The product, as a mixture, falls in Category 2.

Eye damage/irritation: The product contains caustically injuring and irritating substances of the following Categories:
Category 2A: tetrahydrofuran (35 to 45 %),
Category 2B: methyl ethyl ketone (35 to 45 %).
The product, as a mixture, falls in Category 2A.

Respiratory sensitization: Respiratory organ sensitization: No available data.

Skin sensitization: Skin sensitization: No available data.

Germ cell mutagenicity: The product, as a mixture, falls Not Classified.

Carcinogenicity: The product contains carcinogenicity substances of the following Categories:
Category 2: tetrahydrofuran (35 to 45 %),
The product, as a mixture, falls in Category 2.

Reproductive toxicity: The product contains reproductive toxicity substances of the following Categories:

Category 2: tetrahydrofuran (35 to 45 %),
The product, as a mixture, falls in Category 2.

Specific target organ toxicity (single exposure): The product contains single-exposure toxic substances of the following Categories:

Tetrahydrofuran (35～45%) ＞1%, Category 1 (central nervous system) and Category 3 (respiratory tract irritancy, nacrotic effects)
Methyl ethyl ketone (35～45%) ＞1%, Category 2 (kidneys) and Category 3 (nacrotic effects).

The product, as a mixture, falls in Category 1 (central nervous system), Category 2 (kidneys) and Category 3 (respiratory tract irritancy, nacrotic effects).

Specific target organ toxicity (repeated exposure):

The product contains multiple-exposure toxic substances of the following Categories:

Tetrahydrofuran (35～45%) ＞1% Category 1 (liver, respiratory, central nervous system),

Methyl ethyl ketone (35～45%) ＞1%, Category 1 (nervous system).

The product, as a mixture, falls in Category 1 (liver, respiratory, central nervous system, nervous system).

Aspiration hazard:

The product contains more than 10% in total of respiratory-harmful substances of the following Category, however, the kinematic viscosity at 40℃ is more than 20.5mm2/s:

Category 2: tetrahydrofuran (35 to 45 %), methyl ethyl ketone (35 to 45 %).

The product, as a mixture, falls Not Classified.

12. Ecological information

Hazard to the aquatic environment(Acute hazard):

The product, as a mixture, falls Not Classified.

Hazard to the aquatic environment(Long-term hazard):

The product, as a mixture, falls Not Classified.

Hazard to the ozone layer:

Does not contain any ingredient listed in the Annexes to the Montreal Protocol.
Classification Not Possible.

13. Notes on disposal

Residual & waste:

In the disposal of residual and other wastes, observe the relevant laws /regulations and local government rules.
Users of the product should contract with the local government or licensed 'Industrial Waste Processors' for disposal of waste.
It is important to let the contractor know well of fire and health hazards of the product, prior to disposal.

Contaminated containers & packages:

Clean the containers for reuse or dispose them properly in accordance with relevant regulations and local government rules.
Completely empty containers prior to disposal.

14. Transport information

International rule

UN number: 1133 (Adhesive, containing inflammable liquid)

UN classification: Class 3 (inflammable liquid)

Container Grade II

Sea Pollution Prevention Act Harmful liquid material
The enforcement order separate table first;Z Group
(tetrahydrofuran, methyl ethyl ketone)
However, it is non-corresponded when net weights of one container are less than 5L

Domestic control:

Guidance Number 128

Onshore control info. Observe the Fire Defense Law.

Offshore control info. Observe the Marine Vessel Safety Law.

Air cargo control info. Observe the Aviation Law.

Special safety measure: Observe the Fire Defense Law.
On-board containers of hazardous material must be piled firmly and orderly to avoid falling, tumbling and breaking.
Cargo of hazardous material must be transported in a way the containers or the material itself do not suffer severe friction and vibration.
If possible cause of casualty, such as heavy leakage, is found during transportation, try to remedy the situation and notify the fact to the nearby fire department or the relevant bureau.
The driver carrying hazardous material must hold Yellow Card.
Do not load hazardous materials together with food and feedstuff.

15. Regulatory information

Labor Safety and Hygiene Law:

Hazardous materials to be notified to the authority (Chapter 57, Section 2)

(tetrahydrofuran, methyl ethyl ketone)
Hazardous materials to be posted (Chapter 18 of Ordinance)
(tetrahydrofuran, methyl ethyl ketone)

2nd class organic solvents (Solvent Addiction Prevention Rule, Clause 1.1.4)

(tetrahydrofuran, methyl ethyl ketone)

Fire Defense Law:

No. 4 Haz-Mat, No.1 Petroleum, Non-water soluble liquid (Hazard Degree II)

PRTR Law:

Not applicable

Poisonous & Deleterious Substance Control

Not applicable

Sea Pollution Prevention Act

Harmful liquid material
The enforcement order separate table first;Z Group
(tetrahydrofuran, methyl ethyl ketone)
However, it is non-corresponded when net weights of one container are less than 5L

16. Other information

Literature:

1) Chemicals Safety Data Sheet (MSDS) Part 1: Content and Order of Items
2) Guideline for MSDS Edition (Revised Edition) by Japan Chem. Ind. Assoc.
3) GHS Classification Database, Site of National Institute of Technology and Evaluation
4) Hazard Handbook of Chemicals by Japan Industrial Safety and Health Association
5) Hazard communication of chemicals based on GHS-Labelling and Safety Data Sheet(SDS) JIS Z 7253:2012

This data sheet is edited by referring to currently available information, however, it is not intended to guarantee the data values or the precision of contained information. The precautions mentioned above are for ordinary handling and use only therefore please handle with care by implementing appropriate safety measures for new application and usage.