

**SAFETY DATA SHEET (SDS)****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**


<b>Chemical Name:</b>	Esilon Adhesive No.90C White
<b>Name, Address and Telephone</b>	SEKISUI CHEMICAL CO., LTD.
<b>Number of Supplier:</b>	2-10-4 Toranomom, Minato-ku, Tokyo 105-8566 Japan (The Okura Prestige Tower)
	Urban Infrastructure & Environmental Products Company,
	Industrial Piping Systems Division
	+81-3-6748-6489
<b>Fax Number:</b>	+81-3-6748-6553
<b>Emergency Telephone:</b>	+81-3-6748-6489
<b>Emergency Contact:</b>	Department in charge above
<b>Recommended Use and</b>	Adhesive for rigid PVC piping system
<b>Restrictions on Use:</b>	Other applications are prohibited
<b>SDS Number:</b>	#90CW

**2. HAZARDS IDENTIFICATION****GHS Classification****Physical Hazards**

Explosives	Not classified
Flammable gases	Not classified
Aerosol	Not classified
Oxidizing gases	Not classified
Gases under pressure	Not classified
Flammable liquids	Category 2
Flammable solids	Not classified
Self-reactive substances and mixtures	Not classified
Pyrophoric liquids	Not classified
Pyrophoric solids	Not classified
Self-heating substances and mixtures	Classification not possible
Substances and mixtures, which in contact with water, emit flammable gases	Not classified

**Health Hazards**

Oxidizing liquids	Not classified
Oxidizing solids	Not classified
Organic peroxides	Not classified
Corrosive to metals	Not classified
Desensitized explosives	Classification not possible
Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 4
Acute toxicity (Inhalation: gas)	Not classified
Acute toxicity (Inhalation: vapour)	Category 4
Acute toxicity (Inhalation: dust/mist)	Classification not possible
Skin corrosion/irritation	Category 2
Serious eye damage/irritation	Category 2A
Respiratory sensitization	Classification not possible
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (Single exposure)	Category 1 (respiratory system, central nervous system), Category 2 (kidney), Category 3 (narcotic effects, respiratory tract irritation)
Specific target organ toxicity	Category 1 (liver,

	(Repeated exposure)	respiratory organs, bones, nervous system, central nervous system)
<b>Environmental Hazards</b>	Aspiration hazard	Not classified
	Hazards to aquatic environment - acute hazard	Not classified
	Hazards to aquatic environment - chronic hazard	Not classified
	Hazardous to the ozone layer	Classification not possible
<b>Pictograms:</b>		
<b>Signal Words:</b>	Danger	
<b>Hazard Statements:</b>	H302+H312+H332 Harmful if swallowed, in contact with skin, or inhaled H225 Highly flammable liquid and vapour H315 Causes skin irritation H317 May cause an allergic skin reaction H319 Causes serious eye irritation H335 May cause respiratory irritation H336 May cause drowsiness or dizziness H341 Suspected of causing genetic defects H351 Suspected of causing cancer H361 Suspected of damaging fertility or the unborn child H370 Causes damage to respiratory system, central nervous system H371 May cause damage to kidney H372 Causes damage to liver, respiratory organs, bones, nervous system, central nervous system	
<b>Precautionary Statements:</b>		
Prevention	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 mist/vapours/spray. (P260) Avoid breathing gas. (P261) Avoid breathing mist/vapours/spray. (P261) Avoid breathing dust/fume. (P261) Wash hands thoroughly after handling. (P264) Wash eyes 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) Contaminated work clothing should not be allowed out of work place. (P272) Wear protective gloves/eye protection/face protection. (P280) Wear protective clothing. (P280)	
Response	IF ON SKIN: Wash with plenty of soap and running water. (P302+P352) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. (P303+P361+P353) IF INHALED: Remove victim 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) Special treatment is required. (P321) Rinse mouth. (P330) If skin irritation: Get medical advice/attention. (P332+P313) If skin irritation or rash occurs: Get medical advice/attention. (P333+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 appropriate fire extinguishing agents to extinguish. (P370+P378)
Storage	Store in well-ventilated place. Keep container tightly closed. (P403+P233) Store in a well-ventilated place. Keep cool. (P403+P235) Store locked up. (P405)
Disposal	Dispose of contents/container via a licensed industrial waste disposal contractor. (P501)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Classification of Substance or  
Mixture:**

**Mixture**

**Chemical or Generic Name:**

**Vinyl chloride-vinyl acetate copolymer resin adhesive**

Components	Concentration	CAS No.	Reference number in gazetted list in Japan (ENCS, ISHA)	Remarks
Cyclohexanone	25~35%	108-94-1	(3)-2376	
Tetrahydrofuran	25~35%	109-99-9	(5)-53	
Methyl ethyl ketone	20~30%	78-93-3	(2)-542	
Vinyl chloride-vinyl acetate copolymer resin	15~25%	9003-22-9	(6)-76	
Titanium oxide	<1%	13463-67-7	(1)-558	

### 4. FIRST AID MEASURES

**If Inhaled:**

Remove victim to fresh air and keep at rest in a position comfortable  
for breathing.

**If on Skin:**

Get medical advice/attention as needed.

**If in Eyes:**

Clean the skin promptly.

Take off contaminated clothing and wash it before reuse.

If skin irritation, if you feel unwell, get medical advice/attention.

Rinse cautiously with water for several minutes. Remove contact  
lenses, if present and easy to do. Continue rinsing.

Get medical advice/attention.

**If Swallowed:**

Immediately wash the mouth with water.

Get immediate medical advice/attention.

Do NOT induce vomiting.

**Expected Acute and Delayed  
Symptoms:**

Respiratory irritation, cough, shortness of breath due to inhalation.

Gastrointestinal irritation, nausea, vomiting, diarrhea due to  
swallowing.

Skin irritation and degreasing due to contact and eye irritation,  
redness, pain.

Anesthesia, headache, dizziness, tunnel vision, nausea, diarrhea and  
unconsciousness due to excessive exposure.

<b>Advice to Protect the Rescuers:</b>	Rescuers need to wear appropriate protective equipment (such as gas masks for organic solvents) depending on the situation.
<b>Note to Physician:</b>	No data

## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media:</b>	Carbon dioxide, dry chemical powder, foam
<b>Unsuitable Extinguishing Media:</b>	Jet water
<b>Special Hazards and Risks:</b>	Fire may produce irritating, toxic or corrosive gases. Extremely flammable, easy to catch fire when exposed to heat, sparks and flames. The container is in danger of explosion due to heating. Highly flammable liquids and vapors
<b>Special Fire Extinguishing Method:</b>	Cut off the ignition resource and put out the fire with extinguishing medium. In the large-scale fires, it is effective to use foam to block the air. To prevent the spread of fire, cool down nearby facilities by sprinkling water in case of fire in the vicinity. Fight fire from upwind side as far as possible, and wear breathing protective apparatus as appropriate.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions, Protective Equipment and Emergency Procedures:</b>	Workers should wear appropriate protective equipment (see 8. EXPOSURE CONTROLS/PERSONAL PROTECTION) and avoid contact with eyes and skin, or inhalation of gas. Evacuate immediate area. Keep unnecessary personnel away Work from upwind and evacuate people downwind. If indoors, provide adequate ventilation until the treatment is complete.
<b>Environmental Precautions:</b>	Do not allow the product to enter rivers and other body of water, and avoid affect the environment.
<b>Methods and Materials for Containment and Cleaning Up:</b>	Small spills: use adsorbents (sawdust, soil, sand, waste, etc.) to remove small amounts and then wipe off the rest with waste cloth, rag, etc. Large spills: Dike with sand or soil, lead the flow to safety area for recycling.
<b>Prevention Measures for Secondary Disaster:</b>	Quickly remove all ignition sources and equipped with suitable fire extinguishers.

## 7. HANDLING AND STORAGE

### HANDLING

<b>Technical Measures:</b>	Use appropriate protective equipment when there is a risk of inhalation or contact. No smoking.
<b>Local Exhaust / General Ventilation:</b>	Handle in a location with local exhaust or general ventilation equipment.
<b>Precautions for Safe Handling and Measures:</b>	Remove hot materials, sparks and open flames around. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Avoid contact with eyes, skin or clothing. Do not breathe mist/vapours/spray. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.

### STORAGE

<b>Storage Conditions:</b>	Keep away from heat/sparks/open flames, etc. -No smoking. Store in a cool and ventilated place. Store locked up.
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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<b>Equipment Measures:</b>	It is desirable to install a local exhaust system, seal the equipment, or provide proper ventilation so as not to inhale vapors.		
	Cyclohexanone	Tetrahydrofuran	Methyl ethyl ketone
<b>Exposure Limits:</b>	20ppm	50ppm	200ppm
<b>Allowable Concentration (Exposure Limits, Biological Limit Values):</b>			
<b>JSOH (2005):</b>	25ppm	50ppm	200ppm
<b>ACGIH(2005) TLV-TWA</b>	20ppm	50ppm	200ppm
<b>PERSONAL PROTECTIVE EQUIPMENT</b>			
<b>Respiratory Protection:</b>	Gas mask for organic gas		
<b>Hand Protection:</b>	Impermeable protective gloves		
<b>Eye Protection:</b>	Goggles for organic solvent		
<b>Skin and Body Protection:</b>	Long sleeved overalls		
<b>Hygienic Measures</b>	Wash hands thoroughly after handling.		

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Color</b>	White
<b>Odor</b>	Peculiar pungent odor
<b>Melting Point/Freezing Point</b>	≤ -20°C
<b>Boiling Point, Initial Boiling Point and Boiling Range</b>	65.4°C (Boiling point)
<b>Flammability</b>	Existence
<b>Upper/Lower Flammability or Explosive Limits</b>	No data
<b>Flash Point</b>	-17°C (Closed cup)
<b>Auto-ignition Temperature</b>	320°C
<b>Decomposition Temperature</b>	No data
<b>pH</b>	Not applicable
<b>Dynamic Viscosity</b>	About 540(mm <sup>2</sup> /s)/20°C
<b>Solubility</b>	Insoluble in water
<b>N-octanol/water Partition Coefficient (log value)</b>	No data
<b>Vapor Pressure</b>	No data
<b>Density and/or Relative Density</b>	Approx. 0.93 (20°C)
<b>Relative Vapour Density</b>	Not applicable
<b>Particle Characteristics</b>	No data
<b>Nonvolatile:</b>	Approx. 19%
<b>Viscosity:</b>	Approx. 500mPa·s

**10. STABILITY AND REACTIVITY**

<b>Stability</b>	Stable under normal handling conditions.
<b>Possibility of Hazardous Reaction</b>	Reacts violently with strong oxidants and ignites.
<b>Condition to Avoid</b>	Heating.
<b>Incompatible Materials</b>	Oxidants.
<b>Hazardous Decomposition Products</b>	Combustion produces carbon monoxide and carbon dioxide.

**11. TOXICOLOGICAL INFORMATION****Acute Toxicity**  
(Attached table)

	Content	Acute toxicity (oral)	Acute toxicity (dermal)	Acute toxicity (inhalation: gas)	Acute toxicity (inhalation: vapour)	Acute toxicity (inhalation: dust/mist)
Cyclohexanone	25~35%	Category 4 (1544mg/kg)	Category 3 (947mg/kg)	Not classified	Category 3 (2450ppm)	Not classified (8000ppm)
Tetrahydrofuran	25~35%	Category 4 (1851mg/kg)	Classification not possible	Not classified	Not classified (21000ppm)	Classification not possible
Methyl ethyl ketone	20~30%	Not classified (>2000mg/kg)	Not classified (>5000mg/kg)	Not classified	Category 4 (11700ppm)	Classification not possible
Vinyl chloride- vinyl acetate copolymer resin	15~25%	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Titanium oxide	<1%	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible

**Acute Toxicity (Oral):**

Contains substances in the Attached table with Acute toxicity (oral). As a result, calculate the estimated value of the mixture as  $ATE_{mix} = 1695\text{mg/kg}$ .

**Acute Toxicity (Dermal):**

The mixture is classified as Category 4 (Harmful if swallowed).  
Contains substances in the Attached table with Acute toxicity (dermal). As a result, calculate the estimated value of the mixture as  $ATE_{mix} = 1940\text{mg/kg}$ .  
The mixture is classified as Category 4 (Harmful in contact with skin).

**Acute Toxicity  
(Inhalation: vapour)**

Contains substances in the Attached table with Acute toxicity (Inhalation: vapour). As a result, calculate the estimated value of the mixture as  $ATE_{mix} = 5537\text{ppm}$ .

**Skin Corrosion/Irritation:**

The mixture is classified as Category 4 (Harmful if inhaled).  
Contains substances with Skin Irritation in the following categories.  
Category 2: Cyclohexanone (25~35%), Tetrahydrofuran (25~35%), Methyl ethyl ketone (20~30%)

**Serious Eye Damage/Irritation:**

The mixture is classified as Category 2 (Causes skin irritation).  
Contains substances with Serious Eye Damage/Irritation in the following categories.  
Category 2A: Cyclohexanone (25~35%), Tetrahydrofuran (25~35%)  
Category 2B: Methyl ethyl ketone (20~30%)  
The mixture is classified as Category 2A (Causes serious eye irritation).

**Respiratory or Skin  
Sensitizations:**

Respiratory Sensitization: No data  
Skin Sensitizations: Contains the following skin sensitizing substances.  
Category 1: Cyclohexanone (25~35%)  
The mixture is classified as Category 1 (May cause an allergic skin reaction).

**Germ Cell Mutagenicity:**

Contains substances with Germ Cell Mutagenicity in the following categories.  
Category 2: Cyclohexanone (25~35%)  
The mixture is classified as Category 2 (Suspected of causing genetic defects).

**Carcinogenicity:**

Contains substances with Carcinogenicity in the following categories.  
Category 2: Tetrahydrofuran (25~35%), Titanium oxide (<1%, but not applicable as it does not scatter)  
The mixture is classified as Category 2 (Suspected of causing cancer).

<b>Reproductive Toxicity:</b>	Contains substances with Reproductive Toxicity in the following categories. Category 2: Cyclohexanone (25~35%) The mixture is classified as Category 2 (Suspected of damaging fertility or the unborn child).
<b>Specific Target Organ Toxicity (Single Exposure):</b>	Contains substances with Specific Target Organ Toxicity (Single Exposure) in the following categories. Cyclohexanone (25~35%)>1% Category 1 (respiratory system) Category 2 (central nervous system) Category 3 (narcotic effects) Tetrahydrofuran (25~35%)>1% Category 1 (central nervous system) Category 3 (narcotic effects, respiratory tract irritation) Methyl ethyl ketone (20~30%)>1% Category 2 (kidney) Category 3 (narcotic effects, respiratory tract irritation) The mixture is classified as Category 1 (Causes damage to respiratory system, central nervous system) Category 2 (May cause damage to kidney) Category 3 (narcotic effects, respiratory tract irritation)
<b>Specific Target Organ Toxicity (Repeated Exposure):</b>	Contains substances with Specific Target Organ Toxicity (Repeated Exposure) in the following categories. Cyclohexanone (25~35%)>1% Category 1 (bones, central nervous system) Tetrahydrofuran (25~35%)>1% Category 1 (liver, respiratory organs, nervous system) Methyl ethyl ketone (20~30%)>1% Category 1 (nervous system) The mixture is classified as Category 1 (Causes damage to liver, respiratory organs, bones, nervous system, central nervous system)
<b>Aspiration Hazards:</b>	Contains ≥10% of the total amount of substances with Aspiration Hazards in the following categories, but the kinematic viscosity at 40°C is ≥20.5mm <sup>2</sup> /s. Category 2: Cyclohexanone (25~35%), Tetrahydrofuran (25~35%), Methyl ethyl ketone (20~30%) The mixture is Not classified.

## 12. ECOLOGICAL INFORMATION

<b>Hazards to aquatic environment (chronic)</b>	The mixture is Not classified.
<b>Hazards to aquatic environment (acute)</b>	The mixture is Not classified.
<b>Ecological Toxicity:</b>	No data
<b>Persistence/Degradability:</b>	No data
<b>Bioaccumulation:</b>	No data
<b>Mobility in Soil:</b>	No data
<b>Hazardous to the ozone layer:</b>	Ingredients of the product are not listed in the annex of Montreal Protocol, so it cannot be classified.

## 13. DISPOSAL CONSIDERLATIONS

<b>Safety of chemicals, contaminated containers and packaging, and information about waste or recycling required by the environment</b>	Dispose of waste and residues according to agreement with local authorities. Contract an agency for industrial waste disposal licensed by the prefectural governor or local public authorities to dispose of the substance. When contracting an agency for industrial waste disposal, fully notify the agency of possible danger and harmfulness of the substance. Containers should be cleaned and recycled, or properly disposed of in accordance with relevant regulations and local government standards. Empty the container completely because there will be residual.
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**14. TRANSPORT INFORMATION**

<b>UN No.:</b>	1133
<b>UN Proper Shipping Name:</b>	ADHESIVES containing flammable liquid
<b>Hazard Class:</b>	Class 3 (Flammable Liquids)
<b>Packing Group:</b>	II
<b>Marine Pollutant:</b>	Hazardous liquid substances (Enforcement Order Appendix 1 Class Z Cyclohexanone, Tetrahydrofuran, Methyl ethyl ketone) However, the capacity of each container below 5L is not applicable
<b>Domestic Restrictions</b>	
<b>Guidance number:</b>	128
<b>Land regulation information</b>	Follow the provisions of the Fire Service Law.
<b>Maritime regulation information</b>	Follow the provisions of the Ship Safety Law, the Port Regulations Law and the Marine Pollution Prevention Law.
<b>Airline regulation information</b>	Follow the provisions of the Aviation Law.
<b>Special security measures</b>	Follow the provisions of the Fire Service Law. Prevent the goods from collapsing. Take applicable measures to prevent the containers from being dropped and damaged. Do not fall, drop, shock or drag the dangerous goods or containers for storing dangerous goods. During the transportation of dangerous goods, when serious leakage of dangerous goods and other possible disasters occur, emergency measures should be taken to prevent disasters, and the nearby fire control institutions or other relevant institutions should be notified. The Yellow card of dangerous goods in road transport should be carried. Do not transport with food and feed.

**15. REGULATORY INFORMATION**

<b>Industrial Safety and Health Law:</b>	Hazardous substances that should be notified of names, etc. (Article 57-2 of the Law) (Cyclohexanone, Tetrahydrofuran, Methyl ethyl ketone) Hazardous substances that should indicate names, etc. (Article 18 of the Enforcement Order) (Cyclohexanone, Tetrahydrofuran, Methyl ethyl ketone) Class 2 Organic solvents, etc. (Item 4, Paragraph 1, Article 1 of the Regulations on Prevention of Organic Solvent Poisoning) (Cyclohexanone, Tetrahydrofuran, Methyl ethyl ketone)
<b>Fire Service Law:</b>	Class 4, Class I Petroleum Water-insoluble Liquids (Hazard Class II)
<b>Pollutant Release and Transfer Register (PRTR)</b>	Not applicable
<b>Poisonous and Deleterious Substances Control Law</b>	Not applicable
<b>Marine Pollution Prevention Law</b>	Hazardous liquid substances (Enforcement Order Appendix 1 Class Z Cyclohexanone, Tetrahydrofuran, Methyl ethyl ketone) However, the capacity of each container below 5L is not applicable

**16. OTHER INFORMATION**

<b>References:</b>	1) Material Safety Data Sheet (MSDS)-Part 1: Contents and sequence of items 2) Guide to the Production of Product Safety Data Sheets (Revised Edition), Japan Chemical Industry Association 3) GHS classification result database, homepage of National Institute of Technology and Evaluation 4) Hazardous Chemicals Handbook Japan Industrial Safety and Health Association
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## 5) Hazard communication of chemicals based on GHS -- Labelling and Safety Data Sheet (SDS) JIS Z 7253: 2019

Although the contents of the description are created based on the materials and information available at this time, we do not guarantee the completeness or accuracy of the information regarding the data and evaluations described. In addition, since the items described are intended for normal handling, please handle after implementing new safety measures suitable for the intended use and usage in case of special handling.