Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name	:	EVAFLEX™
Product number	:	EV40WH
Company Name	:	DOW-MITSUI POLYCHEMICALS CO., LTD.
Address	:	2-1, Yaesu 2-chome, Chuo-ku, Tokyo 104-0028, Japan
Department	:	Product safety group
Telephone	:	+81-3-6880-7650 (Main number)
Fax	:	+81-3-6880-7658
Identified uses	:	For industrial conversion as a raw material for manufacture of articles or goods.
Uses advised against	:	For manufacturing and research. Please refer to Section 16 for specific uses and comply with them. If you have any questions about using the product for other purposes, please contact our sales representative.
Reference No.	:	2031

2. HAZARDS IDENTIFICATION

GHS classification

Health hazards : Carcinogenicity 1B

＊Hazards not listed above are not subject to classification, do not fall under any category, or cannot be classified.

GHS label elements

Pictograms/Symbols :

Signal word	:	Danger
Hazard statements	:	Risk of carcinogenesis
Precautionary statements	:	The following precautions are required when handling this product.
Safety measures	:	Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wash contact areas thoroughly after handling. Do not eat, drink, or smoke while using this product. Use only outdoors or in a well-ventilated area. It is recommended to wear protective gloves, protective clothing, protective glasses, and protective face. Avoid release to environment.
First aid measures	:	If exposed or concerned about exposure, seek medical attention and treatment. If you feel unwell, seek medical attention and treatment.
Storage	:	Lock it and keep it safe.
Disposal	:	When disposing of the contents/container, please follow applicable laws and regulations and entrust it to an industrial waste disposal company licensed by the local government in charge.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical substance/Mixture : Mixture

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Chemical name or generic name ： Ethylene-vinyl acetate copolymer

Chemical name or generic name	CAS registration number	Content	Reference number in gazetted list
			CSCL・ISHA[*1]
Ethylene-vinyl acetate copolymer	24937-78-8	>=95%	6-6
Additive	CBI	CBI	Registered
Vinyl acetate[*2]	108-05-4	0.1 - 0.4%[*3]	2-728

*1 CSCL: Chemical Substances Control Law ISHA: Industrial Safety and Health Act

*2 Impurity

*3 Our Confidential Information

4. FIRST AID MEASURES

If inhaled : If inhale a large amount of gas generated from fine particles, fine powder, or high-temperature molten resin of the product, remove person to fresh air and rest the person keeping warm with a blanket depending on the situation.
If the person is vomiting, turn the head on the side to secure airway.
If symptom changes appear, immediately get medical advice/attention.

If on skin : Wash affected area thoroughly with running water and soap.
If the hot molten polymer adheres to the skin, immediately take measures against normal burns such as cooling with water.
If any abnormalities appear on skin, seek medical attention and treatment.

If in eyes : If hot molten polymer gets into the eyes, immediately rinse with clean water for at least 15 minutes. Get immediate medical attention from an ophthalmologist.
If you are wearing contact lenses and are not stuck, remove them.

If swallowed : If any abnormalities occur, spit them out and seek medical attention and treatment.
If unconscious, do not give anything orally.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray, powder extinguishing agent, carbon dioxide, various fire extinguishing agents such as foam

Unsuitable extinguishing media : No information

Specific hazards arising from the fire : Generates carbon dioxide and water in case of complete combustion. Generates carbon monoxide and hydrocarbon oxides (organic acids, aldehydes, alcohols, etc.) in addition to these in case of incomplete combustion.

Specific fire extinguishing method : Restrict the area around the fire to authorized personnel.
Remove movable containers to a safe place immediately.
Sprinkle water to cool down the neighboring facilities.

Special protective equipment and precautions for fire-fighters : Wear appropriate self-contained breathing apparatus, protective glasses and protective clothing (heat-proof) that protect eyes and skin during fighting fire.
Work from the windward.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Pellets are slippery if spilled on the ground or floor.
Collect promptly by sweep or suck to prevent falls.
Workers should wear appropriate protective equipment refer to Section 8

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"EXPOSURE CONTROLS/PERSONAL PROTECTION".

Environmental precautions : Avoid release to soil, sewage, rivers and drains, etc.
Collect by installing fine mesh screens, etc. against drains and pits that connect to the outside.

Methods and materials for containment and cleaning up : Collect leakage in an empty container using a broom or explosion-proof vacuum cleaner, etc. Dispose of leakage in accordance with the description in "13. DISPOSAL CONSIDERATIONS".

7. HANDLING AND STORAGE

Safe handling

Engineering measures : Install facility for local or total ventilation in the handling area.
Use explosion-proof mechanical equipment and take measures against static discharge.
In case of pneumatic transportation, take measures to prevent static electricity generation such as using a conductive material for the transport pipe, reducing the transport speed and excursing reliable grounding.

Precautions for safe handling : Do not scatter fragment and dust unless needed.
Avoid inhaling the generated fragment and dust, and remove them promptly.
This product is pellet and has no danger of fire and explosion at room temperature, but like most organic compounds, it will burn under certain conditions, so avoid using fire unless needed.
Be especially careful because damage to the container can cause the load to collapse and, in the worst case, can lead to personal injury.
Confirm no risk of cargo coming off the claws or hooks or cutting the hanging belt when working with a forklift or hoist.
Do not enter under lifting area. Prepare a stand and use all the hanging ropes, hanging belts, or hanging metal fittings attached to the flexible container to lift when lifting a flexible container, etc.
A series of work must be carried out by an educated person to ensure safety.

Hygienic measures : Encourage to wash the hands and face after handling.

Storage

Engineering measures : Install the lighting and ventilating equipment needed for handling in the storage place.
Take precautionary measures against static discharges.

Storing conditions : Please contact us for details as this product is prone to blocking.
Protect from direct sunlight and keep away from fire and heat sources.
Store in a cool, well-ventilated place and avoid high temperature and humidity.
Avoid adhering dust and sand to the container so that other materials do not get mixed in when opening the container.
Be careful as not the container be damaged or wet.
Note that the strength of paper containers such as corrugated cardboard may decrease due to water wetting or long-term storage under high humidity, which may cause the container to collapse.

Container material : Use a sealable container that is not damaged or leaked.

Use the product within 6 months after delivery as a general rule.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Allowable exposure limit : The Japan Society for Occupational Health (2019)：
Class 3 dust (Inorganic and organic dusts other than Classes 1 and 2)：
2mg/m^3 (Respirable dust), 8mg/m^3 (Total dust)
ACGIH TLV-TWA (2019)：
3mg/m^3 (Respirable particles), 10mg/m^3 (Inhalable particles)
Vinyl Acetate : (TWA) 10ppm、(STEL) 15ppm

Facility measures : Install a dust collector and local exhaust to improve indoor ventilation.
Molding operations at high temperatures may generate fumes that are irritating to the eyes, nose and throat.
Provide sufficient ventilation because symptoms such as redness and itching of the eyes, coughing, and sore throat may be caused when exposed to this smoke.
Install eye-washing and emergency shower near the handling area.

Protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines.
If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.
Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present.
The following should be effective types of air-purifying respirators: When dust/mist are present use a/an Particulate filter. When combinations of vapors, acids, or dusts/mists are present use a/an Organic vapor cartridge with a particulate pre-filter.

Hand protection : Consistent with general hygienic practice for any material, skin contact should be minimized.
Use gloves to protect from mechanical injury.
Selection of gloves will depend on the task.
Use gloves with insulation for thermal protection, when needed.

Eye and face protection : Use safety glasses (with side shields).
If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.
If you experience any discomfort to your eyes, use a full-face respirator.

Skin and body protection : Wear clean work clothes.
If necessary, wear protective clothing such as boots and long sleeves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	Solid (Pellet)
Color	:	Natural color
Odor	:	Very slight ester odor
Melting point/Freezing point	:	<=105 °C (DSC method)
Boiling point or initial boiling point and boiling range	:	No information available
Flammability	:	No information available
Upper/Lower flammability or	:	No information available

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explosive limits		
Flash point	:	205 - 285°C
Auto-ignition point	:	450 - 475°C
Decomposition point	:	No information available
pH	:	No information available
Kinetic viscosity	:	No information available
Solubility	:	No information available
n-octanol/water partition coefficient	:	No information available
Vapor pressure	:	No information available
Density and/or relative density	:	920 - 980kg/m^3 (JIS K 7112)
Relative gas density	:	No information available
Particle characteristics	:	No information available
Self-reactivity	:	None
Softening point (VICAT)	:	<=87°C (JIS K 7206)

10. STABILITY AND REACTIVITY

Reactivity	:	Control temperature not to exceed 205°C if residence time is long in order to prevent the resin from decomposing. The temperature should not exceed 230°C even for a short time.
Chemical stability	:	Stable under normal handling and storage conditions at normal temperature.
Possibility of hazardous reactions	:	May react with strong acids and oxidizing agents.
Conditions to avoid	:	Avoid contact with fire and high temperatures.
Incompatible materials	:	Strong acids, oxidizing agents, etc.
Hazardous decomposition products	:	Generates vinyl acetate, acetic acid, carbon monoxide, carbon dioxide, and hydrocarbon oxides (organic acids, aldehydes, alcohols, etc.) by decomposition.

11.TOXICOLOGICAL INFORMATION

Acute toxicity	:	No information available
Skin corrosion/irritation	:	No information available
Serious eye damage/eye irritation	:	No information available
Respiratory sensitization	:	No information available
Skin sensitization	:	No information available
Germ cell mutagenicity	:	No information available
Carcinogenicity	:	1B

(Reference) Vinyl acetate 1B

In (1) and (2) conducted in accordance with appropriate test guidelines and GLP standards, as clear evidence of carcinogenicity including malignant tumors was found in two species of animals, therefore it was classified in Category 1B (Results from Carcinogenicity Studies (Ministry of Health, Labour and Welfare) (Access on September 2019)).

(1) In a carcinogenicity study with rats (drinking water for 2 years), increased incidences of oral squamous cell carcinomas and squamous cell papilloma in treated male groups and oral and esophageal squamous cell carcinomas in treated female groups were observed.

(2) In a carcinogenicity study with mice (drinking water for 2 years),

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increased incidences of squamous cell carcinomas and squamous cell papilloma in the oral cavity and stomach and squamous cell carcinoma of the esophagus and larynx were observed in both sexes of the treated groups.

Reproductive toxicity	:	No information available
Specific target organ toxicity (single exposure)	:	No information available
Specific target organ toxicity (repeated exposure)	:	No information available
Aspiration hazard	:	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity	:	No information available
Persistence/Degradability	:	No information available
Bioaccumulation	:	No information available
Mobility in soil	:	No information available
Hazards to the Ozone layer	:	No information available

13. DISPOSAL CONSIDERATIONS

Residual waste	:	Generally, treat by reuse, incineration or landfill. Incinerate as much as possible to recover energy if reuse is impossible. Use incineration equipment and dispose of in accordance with the "Air Pollution Control Act" when incinerating. Dispose of in accordance with the "Waste Management and Public Cleaning Law" when landfilling. When entrusting disposal, it should be entrusted to a professional waste processor licensed by the local government. Appropriately dispose of by following the related regulations.
Polluted container and packing	:	Recycle containers after they are cleaned, or dispose of them properly in accordance with relevant regulations as well as local regulations. Dispose of the empty container after removing the content thoroughly.

14. TRANSPORT INFORMATION

International regulations

UN Number	:	Not applicable
UN Proper Shipping Name	:	Not applicable
UN Class	:	Not applicable
Packing group	:	Not applicable
Marine pollutant	:	Not applicable
IATA	:	Not regulated

Domestic regulations (Japanese regulations)

Land regulations	:	Follow the regulations of Fire Service Act, Road Act.
Marine regulations	:	Follow the regulations of Ship Safety Act.
Air regulations	:	Follow the regulations of Civil Aeronautics Act.
Special safety precautions and conditions during	:	Confirm no torn or no damage of the container, load and unload without giving impact, rolling over, dropping or breaking.

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transport	Make sure to prevent getting wet and the cargo from collapsing. Avoid direct sunlight and high humidity. For other precautions for loading, refer to "7. HANDLING AND STORAGE". Comply with transportation-related laws and regulations.

15. REGULATORY INFORMATION

・ Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof	:	Not applicable
・ Industrial Safety and Health Act (ISHA)	:	Chemical Substances Requiring Delivery of Documents Vinyl acetate
・ Poisonous and Deleterious Substances Control Act	:	Not applicable
・ Japan Fire Service Act	:	Designated combustible materials. (Synthetic resins, 3000 kg or more)
・ The Ordinance on Industrial Safety and Health	:	A substance specified by the Minister of Health, Labour and Welfare as being carcinogenic under the provisions of Article 577 -2, Paragraph 3 Vinyl acetate

16. OTHER INFORMATION

General notes

Specific use

Medical applications	:	Do not use this product for permanent transplantation into the human body or for medical applications where it is used in permanent contact with body fluids or tissues (in this case, permanent means 30 days or more). In addition, please consult with us in advance when using for medical purposes such as pharmaceutical containers, packaging materials, or medical devices stipulated by the Pharmaceuticals and Medical Devices Act.
Food packaging applications	:	Confirm that it is listed in The Positive List System for Food Utensils, Containers, and Packaging related to the partial revision of The Standards for Foods and Additives (Ministry of Health and Welfare Notification No. 370). Please do not use except under the conditions such as the certified food classification, allowable temperature for use, and restrictions on use. In addition, please contact us regarding the industry voluntary standards.
Other applications	:	If there are laws and regulations (including voluntary regulations) applicable to each application, make sure that the product complies with them, or perform tests as necessary to confirm that there are no problems before use.
Disclaimer	:	This data sheet is prepared based on the information available at this time, but we do not provide any guarantees. It may be revised due to new knowledge and tests. The data is a representative value, not a guaranteed value. In addition, the items described are for normal use, and do not provide any guarantees for safety or hygieny under special conditions or when mixed with other substances. When using the product, please comply with applicable laws and regulations

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and take safety measures in accordance with the intended use and usage at your own risk.

References : 1) JIS Z 7252：2019
2) JIS Z 7253：2019
3) "Recommendation of Allowable Exposure Limit(2019)"
(Journal of Occupational Health , Volume 61)
4) TLVs and BEIs (ACGIH 2019)
5) Database of GHS classification (National Institute of Technology and Evaluation)