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## Material Safety Data Sheet

### SECTION 1 : Product and Company Identification

【Product Name】 DuraSurf DS-TH  
 【Manufacturer】 Harves Co., Ltd.  
 【Address】 9-21-14 Tokiwa,Urawa-ku,Saitama-shi,Saitama, Japan  
 【Emergency Call】 [PHONE] +81-48-824-2821 [FACSIMILE] +81-48-824-2826  
 【Product Use】 Fluoropolymer Coating Solvent

### SECTION 2 : Hazard Identification

#### 【GHS Classification】

Physical Hazards	Explosives	Not Explosives
	Flammable Gases	Not Gases
	Flammable Aerosols	Not Aerosols
	Oxidizing Gases	Not Gases
	Gases Under Pressure	Not Gases
	Flammable Liquid	Not Classified
	Flammable Solid	Not Solids
	Self-Reactive Substance and Mixtures	Not Classified
	Pyrophoric Liquids	Not Classified
	Pyrophoric Solid	Not Solids
	Self-Heating Substances and Mixtures	Not Classified
	Oxidizing Liquids	Not Classified
	Oxidizing Solids	Not Solids
	Organic Peroxides	Not Peroxides
	Corrosive to Metals	Not Classified
	Health Hazards	Acute Toxicity (Oral)
Acute Toxicity (Dermal)		Classification Not Possible
Acute Toxicity (Inhalation : Gas)		Not Gases
Acute Toxicity (Inhalation : Vapour)		Classification Not Possible
Acute Toxicity (Inhalation : Dust)		Not Dust
Acute Toxicity (Inhalation : Mist)		Classification Not Possible
Skin Corrosion / Irritation		Classification Not Possible
Serious Eye Damage / Eye Irritation		Classification Not Possible
Respiratory Sensitization		Classification Not Possible
Skin Sensitization		Classification Not Possible
Germ Cell Mutagenicity		Classification Not Possible
Carcinogenicity		Classification Not Possible
Reproductive Toxicity		Classification Not Possible
Specific Target Organ Toxicity		
Single Exposure	Classification Not Possible	
Repeated Exposure	Classification Not Possible	
Environmental Hazards	Aspiration Hazard	Classification Not Possible
	Acute Aquatic Toxicity	Not Classified
	Chronic Aquatic Toxicity	Not Classified

#### 【GHS Label Elements】

Symbol unnecessary  
 Signal Word unnecessary  
 Hazard Statement unnecessary  
 Precautionary Statement

Safety precautions •Do not handle until all safety precautions have been read and understood.

- Do not eat, drink or smoke when using this product.
- Keep container tightly closed.
- Wash hands thoroughly after handling.

**Immediate Measures**

In case of fire

- Use suitable extinguishing media.

If inhaled

- If thermal decomposition occurs then may be harmful in inhaled.

If swallowed

- No health effects are expected.

If in eyes

- Contact with the eyes during product use is not expected to result in significant irritation.

If on skin

- Contact with the skin during product use is not expected to result in significant Irritation.

If on clothing

- Wash contaminated clothing before reuse.

**Storage**

- Keep container in well-ventilated area.

- Keep container tightly closed.

- Store away from heat.

- Store out of direct sunlight.

**Disposal**

- Dispose of contents/container in accordance with local/regional/national/international regulation.

**SECTION 3 : Composition/Information on Ingredients**

Ingredient	Containing (wt%)	CAS No.
Fluorinated Solvents	100.0	Trade Secret

**SECTION 4 : First-Aid Measures**

**[If Inhaled]**

- If signs/symptoms develop, remove person to fresh air.
- If signs/symptoms persist, get medical attention.

**[If on Skin]**

- No need for first aid is anticipated.

**[If in Eyes]**

- No need for first aid is anticipated.

**[If Swallowed]**

- No need for first aid is anticipated.

**SECTION 5 : Fire-Fighting Measures**

**[Extinguish Media]**

- Non-flammable

**[Extinguish Media which Must Not Use]**

- Nothing

**[Hazard Identification]**

- May produce irritation/toxicity/corrosion gases by fire.

**[Special Extinguish Media]**

- Nothing

**[Protective Equipment for Fire-Fighters]**

- Exposure to extreme heat can give rise to thermal decomposition. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**[Special Precautions]**

- No unusual fire or explosion hazards are anticipated. No unusual effects are anticipated during fire extinguishing operations. Avoid breathing the products and substances that may result from the thermal decomposition of the product or the other substances in the fire zone. Keep containers cool with water spray when exposed to fire to avoid rupture.

**SECTION 6 : Accidental Release Measures**

**[Personal Precautions]**

Protective Equipment and

Emergency Procedures

- Wear suitable protective equipment (see section 8 of the MSDS) to prevent any contamination of skin, eyes and personal clothing.

**[Environmental Precautions]**

Methods for Containment

- Prevent further leakage or spillage if safe to do so. Use sand, perlite or vermiculite as an absorbent for large spills of this material.

Methods for Clean-Up

- Sweep up or gather material and place in appropriate container for disposal.

**SECTION 7 : Handling and Storage**

- 【Handling】**
- For industrial or professional use only. Contents may be under pressure, open carefully.
  - Avoid skin contact with hot material.
  - No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of the hazardous decomposition products mentioned in the Reactivity Data section of this MSDS.
  - Avoid exposing material to extreme conditions of heat, i.e., above 150C (welding, open flame, misuse or equipment failure).
  - Avoid exceeding a watt density of 50 watts/inch<sup>2</sup> from a heater surface.
  - Continuous exposure to 150C results in a very slight decomposition of this product and, therefore, is a very conservative use temperature threshold.
  - Do not breathe thermal decomposition products.
- 【Storage】**
- Keep container in well-ventilated area.
  - Keep container tightly closed. Store away from heat.
  - Store away from strong bases.

**SECTION 8 : Exposure Controls / Personal Protection**

- |  |   |
|--|---|
| <b>【Biological Limit】</b>              | • Non established.  |
| <b>【Facilities】</b>                    | • Non established.  |
| <b>【Personal Protective Equipment】</b> |   |
| Respiratory Protection                 | <ul style="list-style-type: none"> <li>• Under normal use condition, airborne exposures are not expected to be significant enough to require respiratory protection.</li> <li>• During heating, avoid breathing of vapors, mists or spray.</li> <li>    If thermal degradation products are expected, use full face supplied air respirator.</li> </ul>   |
| Hand Protection                        | • Under normal use condition, protection is not necessary.  |
| Eye Protection                         | • As a good industrial hygiene practice, safety glasses with side shields is recommended.   |
| Skin Protection                        | <ul style="list-style-type: none"> <li>• Gloves are not required when product is uncontaminated and at room temperature.</li> <li>• Avoid skin contact with extremely cold or hot product. Wear appropriate gloves when handling this product to protect skin from low or high temperatures.</li> <li>• If the product becomes contaminated during use, select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate.</li> </ul> |

**SECTION 9 : Physical and Chemical Properties**

- |   |                            |
|---|----------------------------|
| <b>【Appearance】</b>                                   | • Clear colorless liquid   |
| <b>【Odour】</b>  | • Faint odor               |
| <b>【Odour Threshold】</b>                              | • Not available            |
| <b>【pH】</b>   | • Not available            |
| <b>【Melting Point/Freezing Point】</b>                 | • -138°C                   |
| <b>【Initial Boiling Point/Boiling Range】</b>          | • 70-80°C                  |
| <b>【Flash Point】(closed-cup)</b>                      | • Not applicable           |
| <b>【Evaporation Rate】(butyl acetate=1)</b>            | • Not available            |
| <b>【Flammability】</b>                                 | • Nothing                  |
| <b>【Upper/Lower flammability or Explosive Limits】</b> | • 210-1070g/m <sup>3</sup> |
| <b>【Vapour Pressure】</b>                              | • 0.0145MPa (25°C)         |
| <b>【Vapour Density】(air=1)</b>                        | • 9.1                      |
| <b>【Relative Density】</b>                             | • 1.4-1.5                  |
| <b>【Solubility】</b>                                   | • Negligible in water      |
| <b>【Partition coefficient: n-octanol/water】</b>       | • Not available            |
| <b>【Auto-Ignition Temperature】</b>                    | • 375°C                    |
| <b>【Decomposition Temperature】</b>                    | • Not available            |
| <b>【Viscosity】</b>                                    | • Not available            |

**SECTION 10 : Stability and Reactivity**

<b>【Reactivity/Chemical Stability】</b>	•Stable under recommended storage conditions and normal use condition.
<b>【Possibility of Hazardous Reaction】</b>	•Nothing
<b>【Conditions to Avoid】</b>	•High temperature
<b>【Incompatible Materials】</b>	•Strong alkali
<b>【Hazardous Decomposition Products】</b>	•Decomposes with heat. Above 300 degrees : Perfluoroisobutylene Above 450 degrees : HF

**SECTION 11 : Toxicological Information**

<b>【Acute Toxicity】</b>	
Oral	•Not available
Dermal	•Not available
Inhalation	•Not available
<b>【Skin Corrosion / Irritation】</b>	•Not available
<b>【Serious Eye Damage / Eye Irritation】</b>	•Not available
<b>【Respiratory / Skin Sensitization】</b>	•Not available
<b>【Germ Cell Mutagenicity】</b>	•Not available
<b>【Carcinogenicity】</b>	•Not available
<b>【Reproductive Toxicity】</b>	•Not available
<b>【Specific Target Organ Toxicity】</b>	•Not available
<b>【Aspiration Hazard】</b>	•Not available

**SECTION 12 : Ecological Information**

<b>【Aquatic Toxicity】</b>	•Fathead Minnow 96-hours LC <sub>50</sub> >750mg/L
<b>【Global Warming Potential】</b>	•50 (100y)
<b>【Ozone Depletion Potential】</b>	•0

**SECTION 13 : Disposal Considerations**

Reclaim if feasible. As a disposal alternative, incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF. Facility must be capable of handling halogenated materials.

**SECTION 14 : Transport Information**

<b>【UN Number】</b>	•Not dangerous substance.
<b>【UN Proper Shipping Name】</b>	•Unnecessary
<b>【Transport Hazard Class】</b>	•Unnecessary
<b>【Packing Group】</b>	•Unnecessary
<b>【Environmental Hazards】</b>	•None
<b>【Special Precautions】</b>	•None

**SECTION 15 : Regulatory Information**

There is not the matter which should mention specially.  
Please be based on the law of each country.

**SECTION 16 : Other Information**

The information on this MSDS represents our current data and best opinion as to the proper use and handling of this product under normal conditions. Any use of the products which is not in conformance with this MSDS or which involves using the product in combination with any other product or any other process is the responsibility of the user.