

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: HIREC® 300-W
Product code: 1101-01-EU
Unique Formula Identifier:

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Fluorine resin paint (Water based type)
Super-water-repellent paint coating, and for prevention of
dew condensation and snow accumulation
Uses advised against: Do not use by consumer.
Reasons: Product is not intended for consumer use.

1.3. Details of the supplier of the safety data sheet

Name of supplier (importer):
Department in Charge
Address
Telephone number
Fax number
e-mail address

Name of manufacturer in Japan: NTT Advanced Technology Corporation
Department in Charge Environmental Business Unit
Address NTT Musashino R&D center, 3-9-11, Midoricho, Musashino-
shi, Tokyo 180-0012, Japan
Telephone number +81-422-39-8966
Fax number +81-422-39-8935
e-mail address kankyo@ml.ntt-at.co.jp

1.4. Emergency telephone number

+81-422-39-8966 (JST 8:30~17:00 of weekday)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008:
Eye Dam.1: H318
Aquatic Acute 1: H400



2.2. Label elements

Hazard pictograms



Signal word

Warning

Hazard Statements

H318: Causes serious eye damage.

H400: Very toxic to aquatic life.

Precautionary Statements

[Prevention]

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

[Emergency response]

P308+P313: IF exposed or concerned: Get medical advice/attention.

[Storage]

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

[Disposal]

P501: Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Supplemental hazard information Not applicable

2.3. Other hazards

The product does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

The product does not have substances identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3: Composition/information on ingredients

3.1. Substances Not applicable

3.2. Mixtures

Product Name: HIREC® 300-W

Information on ingredients:

Chemical name	CAS No.	EC No.	Index No.	REACH Registrat ion No.*	Concentrat ion (wt %)	Classification**	Specific Concentration limits/ M-factor/ Acute Toxicity Estimate
Water	7732-18-5	231-791-2	-	-	43.8	Not Classified	-
Polytetrafluoroethylene	9002-84-0	618-337-2	-	-	40	Not Classified	-
fluoro resin	not known	not known	not known	-	12.2	Not Classified (confirmed by	-

						the raw material manufacturer)	
Ethanol	64-17-5	200-578-6	603-002-00-5	-	1.6	Flam. Liq. 2: H225	ATE (Oral): Rat (male, female) LD ₅₀ = 10,470 mg/kg ATE (Dermal): Rabbit LD ₅₀ > 17,100 mg/kg
Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol	25265-77-4				1.2	Not Classified	ATE (Oral): Rat (male) LD ₅₀ = 6.86 mg/kg ATE (Dermal): Rabbit (male) LD ₅₀ > 16 mg/kg
polyoxyethylene alkyl ether	not known	not known	not known		1.1	Acute Tox. 4: H302 Eye Dam. 1: H318 Skin irrit. 2: H315 Aquatic Acute 1: H400 (Classified by the raw material manufacturer)	-
Titanium dioxide	13463-67-7	236-675-5 643-044-1	022-006-00-2	-	0.1	Carc. 2: H351 (Inhalation)	ATE (Oral): Rat (male, female) LD ₅₀ > 2,000 mg/kg ATE (Inhalation): Rat (male) 4h LC ₅₀ = 5.09 mg/L Rat (male) 4h LC ₅₀ = 3.43 mg/L

* Registration numbers of ingredients which shall be in compliance with Regulation (EC) No 1907/2006 will be filled in later.

** Full texts of relevant hazard statements and risk phrases can be seen in SECTION 16 of this SDS.

SECTION 4: First aid measures

4.1. Description of first aid measures

GENERAL ADVICE

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

If unconscious, place in recovery position and seek medical advice.

IF INHALED

IF ON SKIN

Take off immediately all contaminated clothing.

Wipe up with absorbent material (e.g. cloth, fleece).

Wash off with soap and water.

Do not use solvents and thinner for wipe up.

	Get medical attention if irritation develops and persists. Use the contaminated clothing after washing it well.
IF IN EYES	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
IF SWALLOWED	If swallowed, seek medical advice immediately and show this container or label. Rinse mouth. If possible, give a large amount of water to be discharged. Do not force vomiting without the instructions of medical.
Self-Protection of the First Aider	Tell medical staff what the substance is and be aware of their own protective measures. Wash contaminated clothing when reusing.

4.2. Most important symptoms and effects, both acute and delayed

No special notes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use water, dry chemical powder, fire foam or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

This product is non-flammable. However, if involved in a fire or if overheated, there is a risk of generation of toxic degradation products such as hydrogen chloride (HCl), hydrogen fluoride (HF), carbon monoxide (CO) and CO₂.

5.3. Advice for firefighters

Firefighters should wear proper protective equipment (heat resistive clothes).
Move flammable substance from fire areas, if it can be done without risk.
Use the fire extinguisher specified.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.ear proper protective equipment (Gloves, Gas mask with an organic vapor canister, Apron, Safety goggles and etc.).

6.2. Environmental precautions

Prevent spills from entering rivers. Please note that washing with water may cause environmental pollution due to discharge to rivers.

6.3. Methods and material for containment and cleaning up

Place spills in a chemical waste container and move to safety areas.

Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations.

Collect with a shovel, waste cloth, etc. For a large amount of spillage, enclose it with embankment to prevent it from spilling.

6.4. Reference to other sections

Refer to “SECTION 8: Exposure controls/personal protection” and “SECTION 13: Disposal considerations” as appropriate.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prohibit the use of fire, sparks and hot objects in the surrounding area.

Do not use strong oxidants.

Do not attach to eyes, skin or clothing.

Do not eat, drink or smoke when handling.

Avoid release to the environment.

Pay attention to industrial hygiene.

After handling, wash your hands and face thoroughly, and do not bring gloves or other contaminated protective equipment to rest areas.

Use the personal protective equipment recommended in Section 8 of this SDS.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:

Proper ventilation.

After leaving for a long time, a small amount of precipitate may be seen in the container. Stir well before use.

Incompatible materials:

Separate from oxidizing materials (Organic peroxide. Peroxidative substance).

See Section 10 of this SDS for details.

Conditions for safe storage:

No information Store in a cool, dry place out of direct sunlight.

Store in tightly closed container.

Store away from incompatible materials (see Section 10 of the SDS).

When storing outdoors as a pail, attach a roof or cover.

To prevent freezing, do not use below 0 ° C.

Do not store in places where there is a risk of mixing with oxidizing substances and organic peroxides.

Appropriate hygiene measures:

Always take appropriate hygiene measures, such as washing your hands after handling this substance and before eating, drinking or smoking. Regularly wash work clothes and protective equipment to remove contaminants.

Packing material:

PE : Polyethylene

7.3. Specific end use(s)

Fluorine resin paint (water-based)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acceptable concentration (exposure limit, biological exposure index)

Germany (DFG) 0.3 mg/m³ (Polytetrafluoroethylene)
(Eight hours)

Germany (DFG) 2.4 mg/m³ (Polytetrafluoroethylene)
(Short-term)

Denmark 1900 mg/m³ (Ethanol)
(Eight hours)

Denmark 3800 mg/m³ (Ethanol)
(Short-term)

8.2. Exposure controls

Appropriate engineering controls:

For indoor work, use equipment that is not directly exposed to the worker, such as using automatic equipment, or equipment that can be avoided by the worker by using a local exhaust system.

In confined working areas like tank inside, install device to ventilate the confined areas especially at the bottom.

Use in the well-ventilated areas.

Personal protective equipment:

Respiratory protection	Wear chemical cartridge respirator with an organic vapor cartridges. Use airline respirator at the confined working place. Wear a dust mask. Wear a protective mask that provides appropriate protection against other harmful substances.
Hand, Skin and Body protection	Wear gloves made of a material that does not allow organic solvents or chemicals to penetrate.
Eye protection	Use proper protective equipment for eyes.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with

the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid viscous
Colour	Mat white
Odour	Slight odour
Melting point/freezing point	Not available
Boiling point or initial boiling point and boiling range	No information
Flammability	Not available
Lower and upper explosion limit	No information
Flash point	Not applicable
Auto-ignition temperature	No information
Decomposition temperature	Not available
pH	6.5
Kinematic viscosity	No information
Solubility	Insoluble in water.
Partition coefficient n-octanol/water (log value)	No information
Vapour pressure	No information
Density and/or relative density	1.06
Relative vapour density	No information
Particle characteristics	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosives	No information
Flammable gases	No information
Aerosols	Not applicable
Oxidising gases	No information
Gases under pressure	Not applicable
Flammable liquids	No information
Flammable solids	Not applicable
Self-reactive substances and mixtures	Not applicable
Pyrophoric liquids	No information
Pyrophoric solids	Not applicable
Self-heating substances and mixtures	Not applicable
Substances and mixtures, which emit flammable gases in contact with water	Not applicable
Oxidizing liquids	No information
Oxidizing solids	Not applicable

Organic peroxides	No information
Corrosive to metals	Not applicable
Desensitised explosives	Not applicable

9.2.2 Other safety characteristics

Mechanical sensitivity	No information
Self-accelerating polymerisation temperature	No information
Formation of explosible dust/air mixtures	No information
Acid/alkaline reserve	No information
Evaporation rate	No information
Miscibility	No information
Conductivity	No information
Corrosiveness	No information
Gas group	No information
Redox potential	No information
Radical formation potential	No information
Photocatalytic properties	No information

SECTION 10: Stability and reactivity

10.1. Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2. Chemical stability

This product is stable.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

Touch with dangerous mixed touched substances

10.5. Incompatible materials

Strong oxidants.

10.6. Hazardous decomposition products

No information

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on product:

Acute toxicity (oral):	No information
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Acute toxicity (dermal):	No information
Acute toxicity (inhalation: gas):	No information
Acute toxicity (inhalation: vapour):	No information
Acute toxicity (inhalation: dust/mist):	No information
Skin corrosion/irritation:	No information
Serious eye damage/irritation:	No information
Respiratory sensitization:	No information
Skin sensitization:	No information
Germ cell mutagenicity:	No information
Carcinogenicity:	No information
Reproductive toxicity:	No information
STOT-single exposure:	No information
STOT-repeated exposure:	No information
Aspiration hazard:	No information

Information on ingredients:

Polytetrafluoroethylene

Acute toxicity (oral):	No information
Acute toxicity (dermal):	No information
Acute toxicity (inhalation: gas):	No information
Acute toxicity (inhalation: vapour):	No information
Acute toxicity (inhalation: dust/mist):	No information
Skin corrosion/irritation:	No information
Serious eye damage/irritation:	No information
Respiratory sensitization:	No information
Skin sensitization:	No information
Germ cell mutagenicity:	No information
Carcinogenicity:	No information
Reproductive toxicity:	No information
STOT-single exposure:	No information
STOT-repeated exposure:	No information
Aspiration hazard:	No information

Fluorine resin

Acute toxicity (oral):	No information
Acute toxicity (dermal):	No information
Acute toxicity (inhalation):	No information
Skin corrosion/irritation:	No information
Serious eye damage/irritation:	No information
Respiratory sensitization:	No information
Skin sensitization:	Not sensitising
Germ cell mutagenicity:	Negative
Carcinogenicity:	No information
Reproductive toxicity:	No information

STOT-single exposure: No information
STOT-repeated exposure: No information
Aspiration hazard: No information

Ethanol

Acute toxicity (oral): Rat (male, female) LD₅₀ = 10,470 mg/kg bw
Acute toxicity (dermal): Rabbit LD₅₀ = 17,100 mg/kg bw
Acute toxicity (inhalation): Not classified
Skin corrosion/irritation: Not irritating
Serious eye damage/irritation: Not irritating
Respiratory sensitization: No information
Skin sensitization: Not sensitising
Germ cell mutagenicity: Negative
Carcinogenicity: No information.
Reproductive toxicity: No information
STOT-single exposure: No information
STOT-repeated exposure: NOAEL = 1,730 mg/kg bw/day
Aspiration hazard: No information.

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

Acute toxicity (oral): Rat (male) LD₅₀ = 6.86 mg/kg bw
Acute toxicity (dermal): Rabbit (male) LD₅₀ > 16 mL/kg bw
Acute toxicity (inhalation): Not classified
Skin corrosion/irritation: a mild irritant (category 3)
Serious eye damage/irritation: Not irritating
Respiratory sensitization: No information
Skin sensitization: No information
Germ cell mutagenicity: No information
Carcinogenicity: No information
Reproductive toxicity: No information
STOT-single exposure: No information
STOT-repeated exposure: NOAEL = 1,000 mg/kg bw/day
Aspiration hazard: No information

Polyoxyethylene alkyl ether

Acute toxicity (oral): Classified as “Acute Tox. 4: H302” according to EC No 1272/2008.
Acute toxicity (dermal): No information
Acute toxicity (inhalation): No information
Skin corrosion/irritation: Classified as “Skin Irrit. 2: H315” according to EC No 1272/2008.
Serious eye damage/irritation: Classified as “Eye Dam. 1: H318” according to EC No 1272/2008.
Respiratory sensitization: No information

Skin sensitization:	No information
Germ cell mutagenicity:	No information
Carcinogenicity:	No information
Reproductive toxicity:	No information
STOT-single exposure:	No information
STOT-repeated exposure:	No information
Aspiration hazard:	No information

Titanium dioxide

Acute toxicity (oral):	Rat (male, female) LD ₅₀ > 2,000 mg/kg
Acute toxicity (dermal):	No information
Acute toxicity (inhalation):	Rat (male) 4h LC ₅₀ = 5.09 mg/L Rat (male) 4h LC ₅₀ = 3.43 mg/L
Skin corrosion/irritation:	Not irritating
Serious eye damage/irritation:	Not irritating (OECD TG 405)
Respiratory sensitization:	No information
Skin sensitization:	Not sensitising
Germ cell mutagenicity:	Negative
Carcinogenicity:	Classified as “Carc. 2: H351 (Inhalation)” according to EC No 1272/2008.
Reproductive toxicity:	No information
STOT-single exposure:	No information
STOT-repeated exposure:	NOAEL > 1,000 mg/kg/day
Aspiration hazard:	No information

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

All substances are not listed in the candidate list as having endocrine disrupting properties.

11.2.2. Other information

No information

SECTION 12: Ecological information

12.1. Toxicity:

Information on product: No information

Information on ingredients:

Polytetrafluoroethylene

Acute (short-term) toxicity: No information

Chronic (long-term) toxicity: No information

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

Acute (short-term) toxicity: Fish LC₅₀ = 32 - 41 mg/L

Daphnia magna EC₅₀ = 147.8 mg/L

Algae EC₅₀ = 275 mg/L (freshwater), 1,900 mg/L (marine water)

Chronic (long-term) toxicity: EC₅₀ > 57 mg/L, NOEC = 7.28 mg/L

Ethanol

Acute (short-term) toxicity: Fish LC₅₀ = 11,200 mg/L
Daphnia magna EC₅₀ / LC₅₀ (48hr) = 12,340 mg/L
Algae EC₅₀ = 57 mg/L, NOEC = 7.28 mg/L
Microorganisms EC₅₀ = 5,800 mg/L

Chronic (long-term) toxicity: NOEC = 250mg/L
Daphnia magna EC₅₀ = 454mg/L
Algae EC₅₀ = 275 mg/L (freshwater), 1,900 mg/L (marine water)

Polyoxyethylene alkyl ether

Acute (short-term) toxicity: No information

Chronic (long-term) toxicity: No information

Fluorine resin

Acute (short-term) toxicity: No information

Chronic (long-term) toxicity: No information

Titanium dioxide

Acute (short-term) toxicity: No information

Chronic (long-term) toxicity: No information

12.2. Persistence and degradability:

Information on product: No information

Information on ingredients:

Polytetrafluoroethylene

No information

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

readily biodegradable

Ethanol

readily biodegradable

Polyoxyethylene alkyl ether

No information

Fluorine resin

No information

Titanium dioxide

Readily biodegradable

12.3. Bioaccumulative potential:

Information on product: No information

Information on ingredients:

Polytetrafluoroethylene

No information

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

No information

Ethanol

BCF = 1 – 4.5

Polyoxyethylene alkyl ether

No information

Fluorine resin

No information

Titanium dioxide

No information

12.4. Mobility in soil:

Information on product: No information

Information on ingredients:

Polytetrafluoroethylene

No information

Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol

Koc < 1,000

Ethanol

Koc = 1

Polyoxyethylene alkyl ether

No information

Fluorine resin

No information

Titanium dioxide

No information

12.5. Results of PBT and vPvB assessment:

The product does not meet the PBT and vPvB criteria.

12.6. Endocrine disrupting properties:

All substances are not listed in the candidate list as having endocrine disrupting properties.

12.7. Other adverse effects:

No information

SECTION 13: Disposal considerations

13.1. Waste treatment methods

[Product]

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

[Packaging]

Dispose of containers contaminated by the product in accordance with local or national legal provisions. This material and its container must be disposed of as hazardous waste. Dispose of via a licensed waste disposal contractor.

[Special precautions]

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.1. UN number or ID number	Not regulated
14.2. UN proper shipping name	N/A
14.3. Transport hazard class(es)	Not classified
14.4. Packing group	N/A
14.5. Environmental hazards	No
14.6. Special precautions for user	N/A

Transport within user's premises: always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/ legislation specific for the substance or mixture

The product and its ingredients are not regulated by specific provisions related to protection of human health or the environment at EU level, e.g. not considered as SVHCs or POPs.

The Seveso III Directive (Directive 2012/18/EU) categories: P5a (Ethanol), P5b (Ethanol), P5c (Ethanol)

15.2. Chemical safety assessment

Not conducted

SECTION 16: Other information

Update history:

Date of issue: 2nd May, 2022, ver.1.1

Key literature references and sources for data:

Information of NTT Advanced Technology Corporation
ACGIH, American Conference of Governmental Industrial Hygienists (2021) TLVs and BEIs.

Relevant hazard statements of which do not appear elsewhere in this SDS

H225: Highly flammable liquid and vapour.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H351: Suspected of causing cancer.

H400: Toxic to aquatic life.

Abbreviations

PBT: Persistent, Bioaccumulative and Toxic substance

POPs: Persistent Organic Pollutants

STOT: Specific Target Organ Toxicity

SVHC: Substances of Very High Concern

vPvB: Very Persistent and Very Bioaccumulative

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Eye Dam. 1	H318	Calculation method
Aquatic Acute 1	H400	Calculation method

[Disclaimer]

This SDS has been prepared based on the best available information however, it may not be sufficient in some cases. It is user's responsibility to modify or update any contents in this SDS regarding information on hazardous properties and/or instruction for safe handling of the product when they become available. Precautionary measures in this SDS are only applicable for normal handling conditions and it is necessary to take appropriate additional measures to ensure safe handling which depend on your specific use conditions or situations.



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