

SAFETY DATA SHEET**DSM ARCTIC 8000-I-1****1. Identification of the substance/preparation and company/undertaking**

Product name : DSM ARCTIC 8000-I-1

Supplier : DSM Composite Resins AG
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CH-8207 Schaffhausen
Switzerland
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e-mail address of person responsible for this SDS : DSMRESINS.SDS@dsm.com

Recommended use : Resins system used in the production of fibre reinforced plastics or non-reinforced filled products.

2. Hazards identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : **R10**
Xn; R20
Xi; R36/38
R43

Human health hazards : Harmful by inhalation. Irritating to eyes and skin. May cause sensitisation by skin contact.

Environmental hazards : Based on the available data of this product no hazardous properties are known.

Physical/chemical hazards : Flammable.

3. Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS no.	%	EC no. *	Classification
styrene	100-42-5	20-35	202-851-5	R10 Xn; R20 Xi; R36/38 [1] [2]
2-hydroxyethyl methacrylate	868-77-9	1-20	212-782-2	Xi; R36/38 R43 [1]
Stoddart solvent A colourless, refined petroleum distillate that is free from rancid or objectionable odors and that boils in a range of approximately 150 °C to 205 °C (300 °F to 400 °F).	8052-41-3	0.25-2.5	232-489-3	R10 Xn; R65 N; R51/53 [1] [2]
Solvent naphtha (petroleum), light arom. A complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C8 through C10 and boiling in the range of approximately 135 °C to 210 °C (275 °F to 410 °F). See section 16 for the full text of the R-phrases declared above	64742-95-6	1-2.5	265-199-0	R10 Xn; R65 Xi; R37 R66 N; R51/53 [1]

* EC no. means EINECS or ELINCS number.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. First-aid measures**Effects and symptoms**

Inhalation : Inhalation causes headaches, dizziness, drowsiness and nausea and may lead to unconsciousness.

Ingestion : Irritating to mouth, throat and stomach.

Skin contact : Causes skin irritation. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause sensitisation by skin contact. May cause allergic skin reactions with repeated exposure. Skin inflammation is characterised by itching, scaling, reddening or, occasionally, blistering.

Eye contact : Irritating to eyes. (redness and pain).

First-aid measures

General : Protection of first-aiders: Put on appropriate personal protective equipment (see section 8). Move exposed person to fresh air. Remove contaminated clothing and shoes.

Inhalation : If inhaled, remove to fresh air. Prevent cooling of the person. Keep victim at rest in half-upright position. If not breathing, give artificial respiration. Get medical attention.

Ingestion : If swallowed, rinse mouth with water (only if the person is conscious). If affected person is conscious, give plenty of water to drink. Get medical attention if symptoms appear.

4. First-aid measures

- Skin contact** : Take off immediately all contaminated clothing. Wash with soap and water. Get medical attention.
- Eye contact** : Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.
- First aid facilities** : Ensure that eyewash stations and safety showers are close to the workstation location.

5. Fire-fighting measures

Extinguishing media

Small fire

- Suitable** : Use dry chemical or CO₂.

Large fire

- Suitable** : Alcohol-resistant foam.

Unusual fire/explosion hazards : Vapour is explosive in air at temperatures higher than the flash point.

Hazardous thermal decomposition products : In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, (dense) black smoke, aldehydes, organic acids.

Special fire-fighting procedures : Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Protection of fire-fighters : Wear suitable protective clothing. Self-contained breathing apparatus.

6. Accidental release measures

Personal precautions : Avoid contact with eyes, skin and clothing. Use suitable protective equipment (section 8). Consult expert immediately. Keep away from sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Environmental precautions : Prevent entry into sewers, basements or confined areas. Dyke if necessary.

Clean-up Methods

Small spill and leak : Take up with suitable material. Place in a suitable container. Clean up affected area with a large amount of water. Keep away from incompatible materials and avoid specific conditions (See section 10).

Large spill and leak : Prevent entry into sewers, basements or confined areas. Dyke if necessary. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container. Recycle, if possible. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Fire/explosion hazards Keep away from sources of ignition.

Note: see section 8 for personal protective equipment and section 13 for waste disposal.

7. Handling and storage


Handling : Preferably use in closed systems. Use with adequate ventilation. Use suitable protective equipment. Avoid contact with eyes, skin and clothing. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Take measures against static discharge. Keep away from sources of ignition.

Storage : Store in a fireproof location. Keep in a cool place. Keep away from heat and direct sunlight.

Note: See section 10 for stability and reactivity

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
United Kingdom (UK)	
 Styrene	EH40-WEL (United Kingdom (UK), 9/2006). WEL 15 min limit: 1080 mg/m ³ 15 minute(s). WEL 15 min limit: 250 ppm 15 minute(s). WEL 8 hrs limit: 430 mg/m ³ 8 hour(s). WEL 8 hrs limit: 100 ppm 8 hour(s).

Engineering measures : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Hygiene measures : When using do not eat, drink or smoke. Wash hands after handling compounds and before eating, smoking and using the lavatory and at the end of the day.

Personal protective equipment - Production scale

- Respiratory system** : Wear filter mask, filtertype A.
- Skin and body** : Chemical-resistant protective suit.
- Eyes** : Full-face mask
- Hands** : Wear suitable gloves.
- Recommended material(s)** : 8 hours (breakthrough time): Viton (0.70 mm)

Advice on personal protection is applicable for high exposure levels. Select proper personal protection based on a risk assessment of the actual exposure situation.

9. Physical and chemical properties

Physical state	: Liquid.
Colour	: Brownish.
Odour	: typical
Flash point	: <input checked="" type="checkbox"/> 22 °C Closed cup , ISO 1523
Lower explosion limit	: Not available.
Upper explosion limit	: Not available.
Density (g/cm ³)	: 1.1 to 1.3 g/cm ³ (23°C)
Viscosity	: <input checked="" type="checkbox"/> 000 to 11000 mPa.s (8000 to 11000 cP)

10. Stability and reactivity

Stability	: Stable under recommended storage and handling conditions (see section 7). In case of incorrect use: Fire/explosion hazards.
Conditions to avoid	: Keep away from heat, sparks and flame.
Materials to avoid	: No special recommendations.

11. Toxicological information

Potential acute health effects

Inhalation	: <input checked="" type="checkbox"/> Harmful by inhalation.
Ingestion	: <input checked="" type="checkbox"/> Irritating to mouth, throat and stomach.
Skin contact	: <input checked="" type="checkbox"/> Irritating to skin. May cause sensitisation by skin contact.
Eye contact	: <input checked="" type="checkbox"/> Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> Styrene	LD50 Intraperitoneal	Rat	898 mg/kg	-
	LD50 Oral	Rat	2650 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	12 mg/m ³	4 hours
2-hydroxyethyl methacrylate	LC50 Inhalation Vapour	Mouse	9.5 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>3000 mg/kg	-
Stoddart solvent A colourless, refined petroleum distillate that is free from rancid or objectionable odors and that boils in a range of approximately 150 °C to 205 °C (300 °F to 400 °F).	LD50	Rat	1250 mg/kg	-
	Intraperitoneal LD50 Oral	Rat	5050 mg/kg	-
	LD Dermal	Rabbit	>3 g/kg	-
Solvent naphtha (petroleum), light arom. A complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C8 through C10 and boiling in the range of approximately 135 °C to 210 °C (275 °F to 410 °F).	LD Oral	Rat	>5 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-

Potential chronic health effects

Chronic effects	: <input checked="" type="checkbox"/> Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Teratogenicity	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Developmental effects	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Fertility effects	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Denmark – Carcinogen list	: <input checked="" type="checkbox"/> Contains a substance or substances listed under National Working Environment Authorities Executive Order 140/1997.

Chronic toxicity : No specific data.

Carcinogenicity : No specific data.

Mutagenicity : No specific data.

Teratogenicity : No specific data.

11. Toxicological information

Reproductive toxicity : No specific data.

International regulations lists

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
styrene	A4	2B	-	-	-	-

12. Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
styrene	Mortality	Acute EC50 4.7 mg/L	Daphnia	48 hours
	Population	Acute EC50 0.56 mg/L	Algae	48 hours
	Mortality	Acute LC50 10 mg/L	Fish	96 hours
	Mortality	Acute LC50 29 mg/L	Fish	96 hours
	Mortality	Acute LC50 4.02 mg/L	Fish	96 hours
	Mortality	Acute LC50 25.05 mg/L	Fish	96 hours
2-hydroxyethyl methacrylate	Mortality	Acute LC50 227 mg/L	Fish	96 hours

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
styrene	-	-	Readily




Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations


Methods of disposal (waste of residues; contaminated packaging) : Waste must be disposed of in accordance with national and local environmental regulations.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
ADR/RID Class	<input checked="" type="checkbox"/> N1866	Resin solution, flammable	3	III		<p>Hazard identification number 30</p> <p>Limited quantity LQ7</p> <p>CEPIC Tremcard 30GF1-III</p> <p>Remarks This class 3 material can be considered non hazardous in packagings up to 450 L.</p>
ADNR Class	<input checked="" type="checkbox"/> N1866	Resin solution, flammable	3	III		-
IMDG Class	<input checked="" type="checkbox"/> N1866	Resin solution, flammable	3	III		<p>Emergency schedules (EmS) F-E, S-E</p>

14. Transport information

IATA Class	<input checked="" type="checkbox"/> N1866	<input checked="" type="checkbox"/> Resin solution flammable	3	III		Passenger and Cargo Aircraft Quantity limitation: 60 L Packaging instructions: 309 Cargo Aircraft Only Quantity limitation: 220 L Packaging instructions: 310 Limited Quantities - Passenger Aircraft Quantity limitation: 10 L Packaging instructions: Y309
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PG* : Packing group

15. Regulatory information

EU regulations

Hazard symbol or symbols :



Harmful

Risk phrases :

R10- Flammable.
 R20- Harmful by inhalation.
 R36/38- Irritating to eyes and skin.
 R43- May cause sensitisation by skin contact.

Safety phrases :

S24- Avoid contact with skin.
 S37- Wear suitable gloves.

Contains :

styrene 202-851-5
 2-hydroxyethyl methacrylate 212-782-2

16. Other information

Full text of R phrases referred to in sections 2 and 3 - United Kingdom (UK)

R10- Flammable.
 R20- Harmful by inhalation.
 R65- Harmful: may cause lung damage if swallowed.
 R37- Irritating to respiratory system.
 R36/38- Irritating to eyes and skin.
 R43- May cause sensitisation by skin contact.
 R66- Repeated exposure may cause skin dryness or cracking.
 R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)

n - Harmful
 Xi - Irritant
 N - Dangerous for the environment

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History

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Notice to reader

The information contained in the Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

Training advice : Handling of this substance or preparation is restricted to skilled personnel only.

16. Other information

Sources of key data : Literature data and/or investigation reports are available through the manufacturer.

Alterations compared to the previous version : Alterations compared to the previous version are marked with a little (blue) triangle.