

MATERIAL SAFETY DATA SHEET

DFC-400

Date of Issue: July, 20, 2010

Revision: 1.2

1. Product and company identification

1.1 Product Name: DFC-400

1.2 Recommended use of the chemical and restrictions on use:

Water repellent coating material for car exterior

1.3 Manufacturer / Supplier :

- Name: DNF Co., Ltd.
- Address: 142, Daehwa-ro 132beon-gil, Daedeok-gu, Daejeon 306-802, South Korea
- Telephone: 82-42-932-7939
- Fax: 82-42-932-7947

2. Hazards Identification

2.1 NFPA Level

Ingredient	Health	Flammability	Reactivity
Modified Silazane Polymer	2	3	0
Xylene mixture	2	3	0
mineral spirits	1	2	0

2.2 Emergency Overview

Appearance: Emitting the minimum of Hydrogen and ammonia gas in contact with water

Color: Colorless

Physical State: Liquid

Odor: Slight sweet fragrance and solvent

2.3 Potential health effects

Eye effects: Irritation may occur.

Skin effects: Irritation may occur.

Ingestion: May cause irritation of mucous membranes if vapor or mist is inhaled.

3. Composition/Information on Ingredients

3.1 Description: Silazane Polymer in Solvent

3.2 Chemical Identity:

Ingredient	Percent	CAS No.
Xylene mixture	20~30 %	CAS # 1330-20-7
Mineral spirits	60~70 %	CAS # 64742-47-8
Modified Silazane Polymer	1~5%	CAS # 90387-00-1-

4. First aid measures

4.1 Eyes: Flush with plenty of water or saline solution for removing the chemical.

Never introduce oil or ointment into the eyes without medical advice. If pain is present, refer the victim to an ophthalmologist for further treatment and follow up.

4.2 Skin: Flush with plenty of water and mild soap.

4.3 Ingestion: Call a physician immediately. Do not induce vomiting unless directed by a physician.

4.4 Inhalation: Move to fresh air. Immediately take to a physician for examination and treatment.

5. Fire-fighting measures

5.1 Extinguishing media:

Water, Dry chemical powder, Carbon Dioxide, or Foam.

5.2 Special firefighting procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray or alcohol-type foam to cool fire-exposed containers.

Do not use straight stream.

5.3 Unusual fire and explosions hazards::

Container explosion may occur under fire conditions.

May emit toxic fumes under fire conditions.

6. Accidental release measures

6.1 For small spills:

Cover with an inorganic absorbent, like vermiculite, perlite, ground clay, or sand, sweep up, and dispose appropriately.

6.2 For large spills:

Dike to contain and pump into drums for use or disposal. If any material remains add inorganic absorbent(as above), sweep up, and dispose appropriately. Clean contaminated area with soap and water. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7. Handling and storage

7.1 Handling:

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

7.2 Storage:

Keep container closed. Flammable. Store in areas designated for flammable liquid storage(see NFPA requirements). Keep away from heat, sparks, and flame. Vent periodically to release head pressure.

7.3 Special request:

Store under inert gas. Store at 0°C~20°C

Highly reactive. React with water or alcohol to give ammonia, hydrogen gas or silanes.

8. Exposure controls/personal protection

8.1 Appropriate hygienic practices:

Avoid contact with eyes, skin, and clothing. Avoid breathing vapors, fumes and mists.

Avoid prolonged or repeated exposure. Wash thoroughly after handling, and before eating, drinking, or smoking.

8.2 Engineering controls:

Engineering controls should always be used when available as a first choice over personal protective equipment. Provide adequate ventilation. Use of fume hoods or closed booths recommended when product is used in a manner that may generate mist or aerosol.

8.3 Personal protective equipment:

Normal laboratory protective clothing recommended, i.e. lab coat and/or apron, impervious gloves and safety glasses. If mists or aerosols are generated during handling, and engineering controls are not present to prevent exposure, wear chemical safety goggles and a respirator equipped with an organic vapor cartridge.

8.4 Work practices:

Easily accessible eyewash fountains and safety showers recommended.

8.5 Protective measures during repair and maintenance

Completely isolate and thoroughly clean all equipments, piping or vessels with high flash non-polar solvents before beginning maintenance or repairs.

9. Physical and chemical properties

9.1 Physical state: Liquid

9.2 Physical properties:

Color: Colorless

Odor: Slight sweet fragrance and solvent

Molecular weight: 5.000~25,000

Boiling Point: 139°C~209°C

Melting point: No data available

Explosiveness: No data available

Oxidization: No data available

Vapor pressure: 8.29mmHg at 25°C

Specific Gravity(water=1) : 0.75~0.82

pH : No data available

Viscosity: 1.20~1.58 cP

Refractive index: Not Determined

Mineral Spirits Flash point: 63°C
 Autoignition point: No data available
 Flammable limits: Lower 1.0%, Upper 7.0%

Xylene mixture Flash point: 29°C
 Autoignition point: 465°C
 Flammable limits: Lower 1.1%, Upper 7.0%

10. Stability and reactivity

10.1 Stability: Stable

10.2 Incompatibilities:

Highly reactive. React with water or alcohol to give ammonia, hydrogen gas or silanes.
Caution should be taken when mixing this product with any of these materials.

10.3 Hazardous decomposition products:

Carbon monoxide, Carbon dioxide, Silicon dioxide

11. Toxicological information

11.1 Carcinogenicity information:

Not listed as a carcinogen by NTP(National Toxicology Program); not regulated as a carcinogen by OSHA(Occupational Safety and Health Administration); not evaluated by IARC(International Agency for Research on Cancer).

11.2 Reported human effects:

No human studies have been conducted with this material. The use of recommended protective equipment should prevent any adverse effects from workers handling this material.

11.3 Reported animal effects:

Oral LD50, rat: >1,000mg/kg. (Results for a structurally related compound)

Skin irritation, rabbit: severe erythema with signs of necrosis after 1-hour exposure.

12. Ecological information

This material may be hazardous to aquatic organisms. Avoid release to surface waters and waste treatment systems.

13. Disposal considerations

Do not mix this product with aqueous or other protic wastes streams. Incineration of combustible waste material in a permitted facility in accordance with the local, state, and federal regulations is the recommended disposal method.

14. Transport Information

US DOT: Corrosive liquids, flammable

IATA: Corrosive liquids, flammable, n.o.s., Class 8, UN2920, PG II

15. Regulatory Information

CERCLA 103 (40CFR302.4): This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

SARA 313 (40CFR372): This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

EU Labeling

C: Corrosive

F: Flammable

Xn: Harmful

EU Risk and Safety Phrases:

R10 Flammable

R22 Harmful if swallowed

R34 Causes severe skin burns

S16 Keep away from sources of ignition. No smoking.

S23 Do not breathe gas/fumes/vapor/spray.

S24/25/26 Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of water.

S37/39 Wear suitable gloves and eye/face protection.

16. Other Information

Ensure operators understand the toxic nature of the product. Before using this product, it is recommended that a risk assessment and safety study be carried out. Further information on the use of this product can be obtained from the Technical Product Manager at the nearest DNF facility

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