

DX5011

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2021 (HazCom 2021)

Date of issue 04/13/2013

Revision date: 12/20/22

Version 4

dynax

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

1.1 Product Identifier

Trade name : DX5011

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

Sector of use Product supplied for industrial use only

Use of the substance/mixture DX5011 is a fluorochemical foam stabilizer intended exclusively for commercial use as a component for the manufacture of class B firefighting foam concentrates that are used on flammable liquids.

1.3 Details of the supplier of the safety data sheet

DYNAX CORPORATION

79 Westchester Ave. Pound Ridge NY 10576 USA

Tel: +1 914-764-0202

Fax: +1 914-764-0553

Email: info@dynaxcorp.com

Website: www.dynaxcorp.com

1.4 Emergency telephone number

Emergency number CHEMTREC: +1800-424-9300 24 hours

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

STOT RE 2 H373

H373 - May cause damage to organs (blood, liver, kidneys) through prolonged or repeated exposure (oral)*

Full text of H-phrases: see section 16

2.2 Label elements

GHS-US Labelling

Hazard pictograms (GHS-US)



GHS08

Warning

Signal word (GHS-US)

Hazard Statements (GHS-US)

H373 - May cause damage to organs (blood, liver, kidneys) through prolonged or repeated exposure (oral)*

Precautionary statements (GHS-US)

P260 Do not breathe fume, mist, spray, vapors.

P314 Get medical advice/attention if you feel unwell.

P501 Dispose of contents/container to comply with applicable local, national and international regulations
(See section 13)

2.3 Other hazards

No additional information available

2.4 Unknown acute toxicity (GHS-US)

Not applicable

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.1 Mixture

Name	Product identifier	%	GHS-US classification
2,2'-Iminodiethanol*	(CAS-No.) 111-42-2	<2.5%	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT RE 2, H373

DX5011 contains PFAS (per- or poly-fluoroalkyl substances).

*Hazard statement and pictogram in Section 2 are due to 2,2'-Iminodiethanol (diethanolamine)

Full text of H-phrases: see section 16

Section 4: First aid measures

4.1 Description of first aid measures

First-aid measures general

Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation	Allow victim to breathe fresh air. Allow the victim to rest. In all cases of doubt, or when symptoms persist, seek medical advice.
First-aid measures after skin contact	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice/attention.
First-aid measures after ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Immediately call a POISON CENTER or doctor/physician. Obtain emergency medical attention.

4.2 Most important symptom and effects, both acute and delayed

Symptoms/injuries after eye contact	In fine dispersion/spraying/misting: May irritate eyes
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4.3 Indication of any immediate medical attention and special treatment needed

No additional information

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Foam. Dry powder. Carbon dioxide. Water spray. Sand. Fight larger fires with spray or alcohol resistant foam.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2 Special hazards arising from the substance or mixture.

Explosion hazard	In closed containers, pressure build up could result in distortion, blowing and in extreme cases bursting of the container. Flammable vapors may travel long distances, ignite and flash back to source
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5.3 Advice for firefighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protective equipment for firefighters	Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	Thermal combustion may release carbon monoxide, carbon dioxide, nitrogen oxides (NOx) and hydrofluoric acid- possibly carbonyl fluoride. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Flammable vapors may travel long distances, ignite and flash back to source.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General measures	Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Spills of this product present a serious slipping hazard. Avoid breathing mist or vapor. Avoid contact with skin, eyes and clothing. Take precautionary measures against static discharge.
6.1.1 For non-emergency personnel Emergency procedures	Evacuate unnecessary personnel
6.1.1 For emergency responders Protective equipment Emergency procedures	Equip cleanup crew with proper protection. Ventilate area.

6.2 Environmental precautions

Prevent entry to soil, sewers, public waters and the environment. Notify authorities if liquid enters soil, sewers public waters or the environment.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Ensure adequate ventilation. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect all waste in suitable and labelled containers and dispose according to local, state and national legislation. Store away from other materials. Use only non-sparking tools. Take precautionary measures against static discharge. Dispose in a safe manner in accordance with local, state and national regulations. Do not allow to enter into surface water or drains. Ensure all local, state and national regulations are observed.
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6.4 Most important symptoms and effects, both acute and delayed

See Heading 8. Exposure controls and personal protection

Section 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Provide good ventilation in process area to prevent formation of vapor. do not handle or store near heat, sparks, or any other potential ignition sources. Take precautionary measures against static discharge. Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools. Avoid all eye and skin contact and do not breathe vapor and mist. Wash hands and other exposed areas
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Hygiene measures with mild soap and water before eating, drinking or smoking and when leaving work.
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practices.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures A washing facility/water for eye and skin cleaning purposes should be present. Ensure adequate ventilation.
Storage conditions Keep out of reach of children. Keep only in the original container in a cool, well-ventilated place. Keep container tightly closed and dry. Keep container closed when not in use. Keep away from heat and direct sunlight. Keep away from food and drink.
Incompatible materials Oxidizing agents. Reducing agents.

7.3. Specific end use(s)

No additional information available

Section 8: Exposure controls/ personal protection

8.1 Control parameters

2,2'-Iminodiethanol (111-42-2)		
ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (inhalable fraction and vapor)
NIOSH	NIOSH REL (TWA) (mg/m ³)	15 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	3 ppm

8.1 Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment Avoid all unnecessary exposure. Personal protective equipment should be selected based upon the conditions under which this product is handled or used. Protective goggles. Gloves. Protective clothing. For certain operations, additional Personal Protection Equipment (PPE) may be required.



Hand protection : Wear protective gloves. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Eye protection : Chemical goggles or safety glasses. with side-shields.
Skin and body protection : Long sleeved protective clothing. Antistatic non-skid safety shoes or boots.
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. In case of intensive or longer exposure use self-contained apparatus.
Other information : Do not eat, drink or smoke during use.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Viscous Liquid
Color	Amber
Odor	Mild
Odor threshold	No data available
pH	7-8 at 20°C
Relative evaporation rate (butyl acetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	Non-flammable
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	No data available
Density	1.14 g/cm ³ at 20°C
Solubility	Water: Fully miscible
Log Pow	No data available
Log Kow	No data available

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Viscosity, kinematic	No data available
Viscosity, dynamic	1500-2000 cP's
Explosive properties	Product does not present an explosion hazard
Oxidizing properties	No data available
Explosive limits	No data available

9.2 Other information

No additional information available

Section 10: Stability and reactivity

10.1 Reactivity

No additional information available

10.2 Chemical stability

Not established

10.3 Possibility of hazardous reactions

Not established

10.4 Conditions to avoid

Direct sunlight. heat/sparks/open flames/hot surfaces

10.5 Incompatible materials

Oxidizing agents. Reducing agents

10.6 Hazardous decomposition products

Fumes: Carbon monoxide, carbon dioxide, nitrogen oxides (NOx), and hydrofluoric acid- possibly carbonyl fluoride.

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: Based on the available LD50 values, the classifications are not met.

DX5011

LD50 oral rat		> 5000 mg/kg (EPA Health Effects Testing Guidelines OPPTS Series)
2,2'-Iminodiethanol (111-42-2)		
LD50 oral rat		0.62 mg/kg
LD50 dermal rabbit		12200 mg/kg

Skin corrosion / irritation		Not classified (Based on available data, the classification criteria are not met) pH: 7.3 @20°C
Serious eye damage/ irritation		Not classified (Based on available data, the classification criteria are not met) pH: 7.3 @20°C
Respiratory or skin sensitization		Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity		Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity		Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity		Not classified (Based on available data, the classification criteria are not met)
STOT-Single exposure		Not classified (Based on available data, the classification criteria are not met)
STOT- repeated exposure		May cause damage to organs (blood, liver, kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard		Not classified (Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	:	Not classified (Based on available data, the classification criteria are not met)
Symptoms/injuries after skin contact	:	Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/injuries after eye contact	:	In fine dispersion/spraying/misting: Causes eye irritation.
Symptoms/injuries after ingestion	:	Swallowing a small quantity of this material will result in serious health hazard.

Section 12: Ecological information

12.1 Toxicity

2,2'-Iminodiethanol (111-42-2)

LC50 fish 1		4460 – 4980 mg/l Exposure time: 96 hours, Pimephales promelas; FLOW-THROUGH SYSTEM
EC50 Daphnia 1		55 mg/l Exposure time: 48 hours, Daphnia magna
LC50 fish 2		1200 – 1580 mg/l Exposure time: 96 hours, Pimephales promelas, STATIC SYSTEM

12.2 Persistence and degradability

DX5011

Persistence and degradability		Fluorinated components of DX5011 are persistent and non-degradable
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12.3 Bioaccumulative potential

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Bioaccumulative potential		Not established.
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2,2'-Iminodiethanol (111-42-20)

BCF fish 1	(No significant bioconcentration)
Partition coefficient n-octanol/water (Log Pow)	-2.18 at 25°C

12.4 Mobility in soil

This product family shows mobility in soil

12.5 Other adverse effects

Effect on ozone layer	No additional information available
Effect on the global warming	No additional information available
Other information	Avoid release to the environment.

Section 13: Disposal considerations

DX5011 contains PFAS. Local requirements for waste disposal may be more restrictive or otherwise different from national regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of DX5011.

Disposal of this product and all wastes containing this product must be performed using high temperature incineration at a minimum of 1000°C with a minimum residence time of 2 seconds.

13.1 Waste treatment methods

Waste disposal recommendations	Do not allow to enter into surface water or drains. Disposal of this product and all wastes containing this product must be performed using high temperature incineration at a minimum of 1000°C with a minimum residence time of 2 seconds
Additional information	Prevent contamination of soil, drains and surface waters. Do not re-use empty containers. Do not allow product to reach sewage system.
Ecology - waste materials	Avoid release to the environment.

Section 14: Transport information

In accordance with DOT	Not regulated for transport
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Additional information

Other information	No supplementary information available
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ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

Section 15: Regulatory information

15.1 US Federal regulations

Disposal of DX5011 and all wastes containing this product must be performed using high temperature incineration at a minimum of 1000°C with a minimum residence time of 2 seconds.

AFFF containing DX5011 shall not be used in any manner that causes the uncontrolled release of AFFF, except for purposes of:

- An emergency response in the event of a significant transportation, military or industrial fire involving flammable fuels or fluids; OR
- Testing of AFFF equipment that is intended to be used to extinguish flammable fuel or fluid-related fires provided that complete containment, capture, and proper disposal mechanisms are in place to ensure no AFFF is released into the environment as a result of testing.

The use of AFFF containing DX5011 may not be used for training exercises.

When using AFFF containing DX5011 for emergency response, risk mitigation plans must be in place to reduce environmental release and further migration after the fire is extinguished.

Manufacture of DX5011 such that it contains no C8 impurity levels above those allowed.

Disposal of DX5011 waste only by incineration (at a minimum of 1000°C with a minimum residence time of 2 seconds).

No release to surface waters from manufacturing or processing. Releases during use for emergency response must be minimized according to the risk mitigation plan (as specified above).

Downstream notification provisions memorializing all of the terms listed.

2,2'-Iminodiethanol (111-42-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lbs
SARA Section 313 - Emission Reporting	1.0 %

15.2 International regulations

CANADA

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2,2'-Iminodiethanol (111-42-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU- Regulations

2,2'-Iminodiethanol (111-42-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional data available

Classification according to Directive 67/548/EEC or 1999/45/EC

No additional data available

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15.2.2 National regulations

2,2'-Iminodiethanol (111-42-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3 US State regulations

- Perfluorooctanoic acid (PFOA), a type of PFAS is on California Proposition 65, listed as causing cancer and reproductive toxicity.
- 2,2'-Iminodiethanol is on California Proposition 65, listed as causing cancer.
- For more information go to www.p65warnings.ca.gov/

Section 16: Regulatory information

Other information : None

Full Text of H phrases

Acute Tox. 4 (Oral)	Acute toxicity (oral) category 4
Eye Irrit. 2,	Eye irritation Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeat exposure) Category 2
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure

Abbreviations and acronyms:

ACGIH	American Conference of Government Industrial Hygienists
NIOSH	National Institute for Occupational Safety and Health
PVC	Polyvinyl chloride

SDS US (GHS HazCom 2021)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product