

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

1.1 Product identifier

Trade name: DX5044

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

Sector of Use: Product supplied for professional use only

Application of the substance / the preparation:

DX5044 is a blend of fluorosurfactants 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

Manufacturer/Supplier:

DYNAX CORPORATION
79 Westchester Ave. Pound Ridge NY 10576 USA.
Tel: +1 914-764-0202
Fax: 914 -764 - 0553.
info@dynaxcorp.com
www.dynaxcorp.com

Further information obtainable from:

B-Lands Consulting
5 Place Robert Schuman, BP 1516
38025 Grenoble, FRANCE
Tel: +33 476 295 869
Fax: +33 476 295 870
Email: clients@reachteam.eu
www.reachteam.eu

1.4 Emergency telephone number(s):

CHEMTREC: +1 703-741-5970 (24h)
Ireland - National Poisons Information Centre: 01 837 9964 or 01 809 2566 (healthcare professionals only).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Repr. 1B H360FD May damage fertility. May damage the unborn child.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

The product is classified and labelled according to the CLP regulation.

Hazard pictograms:



GHS08

Signal word: Danger

Hazard-determining components of labelling:

C6 fluorotelomer-based surfactant
2,2'-iminodiethanol

Hazard statements:

H360FD May damage fertility. May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

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Trade name: DX5044**Precautionary statements:**

- P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P314 Get medical advice/attention if you feel unwell.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

DX5044 contains per- or poly-fluoroalkyl substances (PFAS)
 Restricted to professional users.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****Description:** Mixture consisting of the following components.**Hazardous components:**

CAS: 112-34-5 EINECS: 203-961-6	2-(2-butoxyethoxy)ethanol Eye Irrit. 2, H319	2-<5%
CAS: 107-21-1 EINECS: 203-473-3	ethanediol STOT RE 2, H373; Acute Tox. 4, H302	1-<3%
CAS: 107-41-5 EINECS: 203-489-0	2-methylpentane-2,4-diol Repr. 2, H361d; Skin Irrit. 2, H315; Eye Irrit. 2, H319	1-<3%
CAS: 111-42-2 EINECS: 203-868-0	2,2'-iminodiethanol STOT RE 2, H373; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315	1-<3%
CAS: 67-56-1 EINECS: 200-659-6	Methanol Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370 Specific concentration limits: STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %	<1%

Additional information: For the wording of the listed hazard phrases refer to section 16.**SECTION 4: First aid measures****4.1 Description of first aid measures****General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident is recommended.

After inhalation: Move patient to fresh air, if symptoms persist consult a doctor.**After skin contact:** Generally the product does not irritate the skin.**After eye contact:** Rinse opened eye for several minutes under running water.**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

5.3 Advice for firefighters

Protective equipment:

Do not enter fire area without proper personal protective equipment, including respiratory protection (EN137).

Mouth respiratory protective device.

Additional information:

Thermal combustion may release carbon monoxide, carbon dioxide, nitrogen oxides (NO_x) and hydrofluoric acid- possibly carbonyl fluoride.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use respiratory protective device.

6.2 Environmental precautions

Prevent entry to soil, sewage systems, water course and the environment.

Inform respective authorities in case of seepage into water course, soil, sewage systems or the environment.

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material.

Ensure adequate ventilation.

Dispose contaminated material as waste according to section 13.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Information about fire - and explosion protection: Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Store in a cool, dry location in well sealed receptacles.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep container tightly closed.

7.3 Specific end use(s):

No further relevant information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

111-42-2 2,2'-iminodiethanol

OEL Long-term value: 1* mg/m³, 0.2 ppm
*Inhalable fraction and vapour

107-21-1 ethanediol

OEL Short-term value: 40 mg/m³, 104 ppm
Long-term value: 52 mg/m³, 20 ppm
Sk, IOELV

112-34-5 2-(2-butoxyethoxy)ethanol

OEL Short-term value: 101.2 mg/m³, 15 ppm
Long-term value: 67.5 mg/m³, 10 ppm
IOELV

67-56-1 Methanol

OEL Long-term value: 260 mg/m³, 200 ppm
Sk, IOELV

DNELs

111-42-2 2,2'-iminodiethanol

Inhalative	DNEL - Long-term exposure - systemic effects	0.75 mg/m ³ (worker)
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Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

Wash hands before breaks and at the end of work.

Keep away from foodstuffs, beverages and feed.

Store protective clothing separately.

Respiratory protection:

In case of brief exposure use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.



Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/the preparation/ the chemical mixture.

Select the glove material based on a consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material:

The exact break through time must be determined by the manufacturer of the protective gloves.

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Trade name: DX5044**Eye/face protection**

Safety goggles (EN 166).

Goggles recommended during refilling

Body protection: Protective work clothing.**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information**

Physical state	Fluid
Colour:	Amber.
Odour:	Mild.
Odour threshold:	Not determined.
Melting point/freezing point:	Not determined.
Boiling point or initial boiling point and boiling range	Not determined.
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Non-flammable
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
pH	Not determined.
VOC (EC):	
Dynamic:	Not determined.
Solubility	
Water:	Not determined.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not determined.
Density and/or relative density	
Density at 20 °C:	1.16 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information

Appearance:	
Form:	Liquid.
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard. Not determined.
Water:	34.1 %
Solids content:	0.0 %
Softening point/range	
Oxidising properties	Not determined.
Evaporation rate	Not determined.

Information with regard to physical hazard classes

Explosives	Not applicable.
Flammable gases	Not applicable.
Aerosols	Not applicable.
Oxidising gases	Not applicable.
Gases under pressure	Not applicable.
Flammable liquids	Not applicable.
Flammable solids	Not applicable.

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Self-reactive substances and mixtures	Not applicable.
Pyrophoric liquids	Not applicable.
Pyrophoric solids	Not applicable.
Self-heating substances and mixtures	Not applicable.
Substances and mixtures, which emit flammable gases in contact with water	Not applicable.
Oxidising liquids	Not applicable.
Oxidising solids	Not applicable.
Organic peroxides	Not applicable.
Corrosive to metals	Not applicable.
Desensitised explosives	Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous decomposition products

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

SECTION 11: Toxicological information

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

Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values:

Oral	LD50	>5,000 mg/kg (Rat)
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111-42-2 2,2'-iminodiethanol

Oral	LD50	1,820 mg/kg (Rat)
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107-21-1 ethanediol

Oral	LD50	7,712 mg/kg (Rat)
Dermal	LD50	3,500 mg/kg (mouse)
Inhalative	LC50	2.5 mg/L (Rat)

25498-49-1 Propanol, [2-(2-methoxymethylethoxy)methylethoxy]-

Oral	LD50	3,400 mg/kg (Rat)
Dermal	LD50	15,440 mg/kg (rab)

112-34-5 2-(2-butoxyethoxy)ethanol

Oral	LD50	5,660 mg/kg (Rat)
Dermal	LD50	4,000 mg/kg (rabbit)

107-41-5 2-methylpentane-2,4-diol

Oral	LD50	3,700 mg/kg (Rat)
Dermal	LD50	8,560 mg/kg (rabbit)

C6 fluorotelomer-based surfactant

Oral	LD50	300 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rat)

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Inhalative	LC50	0.16 mg/L (Rat)
67-56-1 Methanol		
Oral	LD50	5,628 mg/kg (Rat)
Dermal	LD50	17,100 mg/kg (rabbit)
Inhalative	LC50/6h	43,680 mg/m ³ air (Cat)
64-17-5 Ethanol		
Oral	LD50	7,060 mg/kg (Rat)
Inhalative	LC50/4h	20,000 mg/L (Rat)

Skin corrosion/irritation: Based on available data, the classification criteria are not met.**Serious eye damage/irritation:** Based on available data, the classification criteria are not met.**Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.**Germ cell mutagenicity:** Based on available data, the classification criteria are not met.**Carcinogenicity:** Based on available data, the classification criteria are not met.**Reproductive toxicity:** May damage fertility. May damage the unborn child.**STOT-single exposure:** 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

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.**Additional toxicological information:**

Repeated dose toxicity NOAEL values		
62880-93-7 2-methyl-2-[(1-oxo-3-[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)thio]propyl)amino]-1-propanesulfonic acid, sodium salt (CBI)		
Dermal	NOAEL/28d	1,000 mg/kg bw/day (Rat)

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Repr. 1B

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties
None of the ingredients are listed.

SECTION 12: Ecological information**12.1 Toxicity**

Aquatic toxicity:	
LC50/48h	385 mg/L (Daphnia Magna) (OECD 202)
EC50/48h	369 mg/L (Daphnia Magna) (OECD 202)
EC50/24h	>1,000 mg/L (Daphnia Magna) (OECD 202)
EC50/72h	63.5 mg/L (algae) (OECD 201)
LOEC 72h	33 mg/L (algae) (OECD 201)
C6 fluorotelomer-based surfactant	
LC50/96h	>100 mg/L (Danio rerio)
LC50/48h	4 mg/L (Daphnia Magna)
EC50/48h	7.41 mg/L (Daphnia Magna)
EC50r/72h	0.62 mg/L (algae)

12.2 Persistence and degradability

Fluorinated components of DX5044 are persistent and non-degradable.

12.3 Bioaccumulative potential No further relevant information available.**12.4 Mobility in soil** This family of products shows mobility in soil.

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Trade name: DX5044**12.5 Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects**Remark:** Harmful to fish**Additional environmental information:****General notes:**

Harmful to aquatic organisms

Water hazard class 1 (German Regulation) (Self-assessment): Slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Recommendation:**

Do not allow product to reach water course, sewage systems, soil and the environment.

DX5044 contains PFAS. Small quantities of DX5044 may be collected on adsorbents which can then be disposed of. Collect all waste in suitable and labelled containers and disposed in accordance with official regulations.

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.

Do not allow product to reach sewage system.

Uncleaned packaging:**Recommendation:**

Disposal must be made in accordance with official regulations.

Packaging that may not be cleansed must be disposed of in the same manner as the product.

SECTION 14: Transport information**14.1 UN number or ID number****ADR, IMDG, IATA** Not applicable.**14.2 UN proper shipping name****ADR, IMDG, IATA** Not applicable.**14.3 Transport hazard class(es)****ADR, ADN, IMDG, IATA**
Class Not applicable.**14.4 Packing group****ADR, IMDG, IATA** Not applicable.**14.5 Environmental hazards****Marine pollutant:** No**14.6 Special precautions for user** Not applicable.**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****Directive 2012/18/EU****Named dangerous substances - ANNEX I** None of the ingredients are listed.

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Trade name: DX5044**REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 55, 69**DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients are listed.

REGULATION (EU) 2019/1148**Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients are listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients are listed.

Regulation (EC) No 273/2004 on drug precursors

None of the ingredients are listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients are listed.

15.2 Chemical safety assessment A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H361d Suspected of damaging the unborn child.

H370 Causes damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

Date of previous version: 19.06.2023**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

WEL: Workplace Exposure Limits

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 1B: Reproductive toxicity – Category 1B

Repr. 2: Reproductive toxicity – Category 2

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3