

DX1026

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 06/22/2015 Version: 1.0

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

1.1. Product identifier

Trade name : DX1026

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

Use of the substance/mixture : Fire fighting foam

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: 914 -764 - 0553

Email: Chang.jho@dynaxcorp.com
 info@dynaxcorp.com

Website: www.dynaxcorp.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: +1 800-424-9300 24 hours

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

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

3.2. Mixture

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Name	Product identifier	%	GHS-US classification
Ethylene glycol	(CAS No) 107-21-1	25 - 50	Acute Tox. 4 (Oral), H302
Diethylene glycol monobutyl ether	(CAS No) 112-34-5	5 - 10	Flam. Liq. 4, H227 Eye Irrit. 2A, H319
2,4-Pentanediol, 2-methyl-	(CAS No) 107-41-5	<4	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
tert-Butyl alcohol	(CAS No) 75-65-0	<3	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 STOT SE 3, H335

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 symptoms and effects, both acute and delayed

- Symptoms/injuries after eye contact : In fine dispersion/spraying/misting: May irritate eyes.

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

No additional information available

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. Heavier than air, vapours may travel long distances along ground, ignite and flash back to source.

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 and dioxide. Nitrogen oxides (NOx). Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

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.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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6.3. Methods and material 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 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/national regulations. Do not allow to enter into surface water or drains. Ensure all national/local regulations are observed.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide good ventilation in process area to prevent formation of vapour. 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 vapour and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene measures : 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

Diethylene glycol monobutyl ether (112-34-5)		
ACGIH	ACGIH TWA (ppm)	10 ppm (inhalable fraction and vapor)

Ethylene glycol (107-21-1)		
ACGIH	ACGIH Ceiling (mg/m ³)	100 mg/m ³ (aerosol only)

tert-Butyl alcohol (75-65-0)		
ACGIH	ACGIH TWA (ppm)	100 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	300 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm

2,4-Pentanediol, 2-methyl- (107-41-5)		
ACGIH	ACGIH Ceiling (ppm)	25 ppm

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

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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 : Liquid
Colour : Yellow
Odour : Ammonia-like
Odour threshold : No data available
pH : 7-9 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 : 60 °C
"non-flammable, does not sustain combustibility" in compliance with the requirements of the HMR and United Nations Transport of Dangerous Goods Manual of Tests and Criteria, fifth revised edition (2009), Test Method L.2 and to the CLP Annex I: 2.6.4.5 sustained combustibility test L.2, Part III, section 32 of the UN RTDG, Manual of Tests and Criteria.
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Not applicable
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Density : 1.18 g/cm³ at 20°C
Solubility : Water: Fully miscible
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising 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.

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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

Fume. Carbon monoxide. Carbon dioxide. Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
(Based on available data, the classification criteria are not met. On basis of test data.)

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LD50 oral rat	> 5000 mg/kg

Diethylene glycol monobutyl ether (112-34-5)	
LD50 oral rat	3384 mg/kg
LD50 dermal rabbit	2700 mg/kg
ATE US (oral)	3384.000 mg/kg bodyweight
ATE US (dermal)	2700.000 mg/kg bodyweight

Ethylene glycol (107-21-1)	
LD50 oral rat	4000 - 10200 mg/kg
LD50 dermal rat	10600 mg/kg
LD50 dermal rabbit	9530 µl/kg
ATE US (oral)	500.000 mg/kg bodyweight
ATE US (dermal)	10600.000 mg/kg bodyweight

tert-Butyl alcohol (75-65-0)	
LD50 oral rat	2200 mg/kg
LD50 dermal rabbit	> 2 g/kg
LC50 inhalation rat (ppm)	> 10000 ppm/4h
ATE US (oral)	2200.000 mg/kg bodyweight
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

2,4-Pentandiol, 2-methyl- (107-41-5)	
LD50 oral rat	3692 mg/kg
LC50 inhalation rat (mg/l)	> 310 mg/m ³ (Exposure time: 1 h)
ATE US (oral)	3692.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified
(Based on available data, the classification criteria are not met)
pH: 6 - 7 at 20°C

Serious eye damage/irritation : Not classified
(Conclusive but not sufficient for classification. On basis of test data.)
pH: 6 - 7 at 20°C

Respiratory or skin sensitisation : 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)

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tert-Butyl alcohol (75-65-0)	
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity

Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (repeated exposure)	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after eye contact	: In fine dispersion/spraying/misting: May irritate eyes.

SECTION 12: Ecological information

12.1. Toxicity

Diethylene glycol monobutyl ether (112-34-5)	
LC50 fish 1	1300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 1	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Ethylene glycol (107-21-1)	
LC50 fish 1	41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	46300 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

tert-Butyl alcohol (75-65-0)	
LC50 fish 1	6130 - 6700 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	933 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	4607 - 6577 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

2,4-Pentanediol, 2-methyl- (107-41-5)	
LC50 fish 1	10500 - 11000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	2700 - 3700 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

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Persistence and degradability	Not established.

12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.

Diethylene glycol monobutyl ether (112-34-5)	
BCF fish 1	(no bioconcentration expected)

Ethylene glycol (107-21-1)	
Log Pow	-1.93

tert-Butyl alcohol (75-65-0)	
BCF fish 1	1.09
Log Pow	0.35

2,4-Pentanediol, 2-methyl- (107-41-5)	
Log Pow	< 0.14

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12.4. Mobility in soil

No additional information available

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

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of in accordance with relevant local regulations. Do not allow to enter into surface water or drains.

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

Additional information

Other information : No supplementary information available.

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

Diethylene glycol monobutyl ether (112-34-5)

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

EPA TSCA Regulatory Flag

T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

Ethylene glycol (107-21-1)

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

Listed on United States SARA Section 313

EPA TSCA Regulatory Flag

Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

RQ (Reportable quantity, section 304 of EPA's List of Lists)

5000 lb

SARA Section 313 - Emission Reporting

1.0 %

tert-Butyl alcohol (75-65-0)

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

Listed on United States SARA Section 313

SARA Section 313 - Emission Reporting

1.0 %

2,4-Pentanediol, 2-methyl- (107-41-5)

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

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15.2. International regulations

CANADA

Diethylene glycol monobutyl ether (112-34-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Ethylene glycol (107-21-1)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
tert-Butyl alcohol (75-65-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
2,4-Pentanediol, 2-methyl- (107-41-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

Diethylene glycol monobutyl ether (112-34-5)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Ethylene glycol (107-21-1)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
tert-Butyl alcohol (75-65-0)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
2,4-Pentanediol, 2-methyl- (107-41-5)	
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

15.2.2. National regulations

Diethylene glycol monobutyl ether (112-34-5)	
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) 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 the Canadian IDL (Ingredient Disclosure List)	
Ethylene glycol (107-21-1)	
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory 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 the Canadian IDL (Ingredient Disclosure List)	

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tert-Butyl alcohol (75-65-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
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 the Canadian IDL (Ingredient Disclosure List)

2,4-Pentanediol, 2-methyl- (107-41-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
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 the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

No additional data available

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapour
H227	Combustible liquid
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

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