



Safety Data Sheet

TQ3 North America, Inc

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Product Name: FX 400, Part B, Polyol, HY

TQ3 North America encourages and expects you to read and understand the entire SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification

Product Name: FX 400, Part B, Polyol, HY

Identified uses

Research sample.

COMPANY IDENTIFICATION

TQ3 North America, Inc
23 Commerce Road, Unit A
Fairfield, NJ 07004
UNITED STATES

Customer Information Number:

973 882 7900
info@tq-3.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-424-9300
Local Emergency Contact: 800-424-9300

2. Hazards Identification

Classification of the substance or mixture This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Hazard Class:

Acute toxicity	Category 4
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - repeated exposure (Oral)	Category 2

Label elements

Hazard Symbol:



Signal Word: Danger

Hazards of product:

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

Prevention: Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Storage: Store locked up.

Disposal: Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.

3. Composition Information

This product is a mixture.

Component	CAS #	Amount
Propylene glycol-propylene oxide polymer	25322-69-4	>= 60.0 - <= 80.0 %
Diethyltoluenediamine (DETDA)	68479-98-1	>= 10.0 - <= 30.0 %
Polypropylene glycol bis(aminopropyl) ether	9046-10-0	>= 7.0 - <= 13.0 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Suitable emergency safety shower facility should be immediately available.

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of immediate medical attention and special treatment needed

Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Refer to Section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Spills or discharge to natural waterways is likely to kill aquatic organisms. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in accordance with good manufacturing practices.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Propylene glycol-propylene oxide polymer	AIHA WEEL	TWA Aerosol.	10 mg/m ³
Diethyltoluenediamine (DETDA)	Dow IHG	TWA	0.02 ppm SKIN

Personal Protection

Eye/Face Protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance

Physical State Liquid.

Color Red

Odor	Odorless
Odor Threshold	No test data available
pH	not applicable
Melting Point	Not available
Freezing Point	No test data available
Boiling Point (760 mmHg)	Not available.
Flash Point - Closed Cup	>= 93.3 °C (>= 199.9 °F)
Flash Point - Open Cup	>= 93.3 °C (>= 199.9 °F)
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Vapor Pressure	no data available
Vapor Density (air = 1)	Not available
Specific Gravity (H2O = 1)	Not available
Solubility in water (by weight)	no data available
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	No test data available

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions

Polymerization will not occur by itself.

Conditions to Avoid: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid contact with metals such as: Brass. Zinc. Copper. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments.

11. Toxicological Information

Acute Toxicity

Ingestion

Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat. In animals, high oral doses caused central nervous system effects and irregular heartbeats.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s): Estimated. LD50, rat > 500 mg/kg

Aspiration hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Dermal

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s): Estimated. LD50, Rabbit > 2,000 mg/kg

Inhalation

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation.

As product: The LC50 has not been determined.

Eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Elevated temperatures may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness.

Skin corrosion/irritation

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage. Prolonged contact may cause severe skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Sensitization**Skin**

Based on information for component(s): Did not cause allergic skin reactions when tested in humans. Did not demonstrate the potential for contact allergy in mice. Did not cause allergic skin reactions when tested in guinea pigs.

Respiratory

No relevant data found.

Repeated Dose Toxicity

Based on information for component(s): In rats, repeated dietary ingestion of diethyltoluenediamine (DETDA) has caused pancreatic, eye, liver and thyroid effects.

Chronic Toxicity and Carcinogenicity

Diethyltoluenediamine (DETDA) has caused cancer in long-term animal studies. Increased numbers of tumors in the liver, thyroid and possibly the mammary glands were observed in rats given DETDA in their diet at exaggerated doses for 2 years.

Developmental Toxicity

No relevant data found.

Reproductive Toxicity

No relevant data found.

Genetic Toxicology

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in animal genetic toxicity studies.

12. Ecological Information

Toxicity**Data for Component: Propylene glycol-propylene oxide polymer**

For this family of materials: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Data for Component: Diethyltoluenediamine (DETDA)

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, *Leuciscus idus* (Golden orfe), static test, 48 h: 194 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: < 1 mg/l

Toxicity to Micro-organisms

EC10; Bacteria, 16 h: 170 mg/l

Data for Component: Polypropylene glycol bis(aminopropyl) ether

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Fish Acute & Prolonged Toxicity

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 15 mg/l

Aquatic Plant Toxicity

EC50, alga Scenedesmus sp., static test, 72 h: 135 mg/l

Persistence and DegradabilityData for Component: Propylene glycol-propylene oxide polymer

For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Data for Component: Diethyltoluenediamine (DETDA)

Material is not readily biodegradable according to OECD/EEC guidelines.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
< 1 %	28 d	OECD 301D Test	fail

Theoretical Oxygen Demand: 3.23 mg/mgData for Component: Polypropylene glycol bis(aminopropyl) ether

Material is not readily biodegradable according to OECD/EEC guidelines.

Theoretical Oxygen Demand: 2.42 mg/mg**Bioaccumulative potential**Data for Component: Propylene glycol-propylene oxide polymer**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.Data for Component: Diethyltoluenediamine (DETDA)**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient, n-octanol/water (log Pow):** 1.17 Measured**Bioconcentration Factor (BCF):** 3; Estimated.Data for Component: Polypropylene glycol bis(aminopropyl) ether**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient, n-octanol/water (log Pow):** -0.34 Estimated.**Mobility in soil**Data for Component: Propylene glycol-propylene oxide polymer**Mobility in soil:** No data available.Data for Component: Diethyltoluenediamine (DETDA)**Mobility in soil:** Potential for mobility in soil is low (Koc between 500 and 2000)., Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.**Partition coefficient, soil organic carbon/water (Koc):** 551.2 Estimated.**Henry's Law Constant (H):** 2.62E-09 atm*m3/mole; 25 °C Estimated.Data for Component: Polypropylene glycol bis(aminopropyl) ether**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).**Partition coefficient, soil organic carbon/water (Koc):** 10 Estimated.**Results of PBT and vPvB assessment**Data for Component: Propylene glycol-propylene oxide polymer

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: Diethyltoluenediamine (DETDA)

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Data for Component: Polypropylene glycol bis(aminopropyl) ether

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Other adverse effects

Data for Component: Propylene glycol-propylene oxide polymer

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Data for Component: Diethyltoluenediamine (DETDA)

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Data for Component: Polypropylene glycol bis(aminopropyl) ether

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

13. Disposal Considerations

Disposal methods

NOTICE: Research sample for use by qualified personnel only. Upon completion of tests, dispose of material and container safely and in accord with federal, state/provincial and local laws and regulations. If further information is needed on disposal or use, consult The Dow Chemical Company.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.

Technical Name: Polypropylene glycol bis(aminopropyl) ether

Hazard Class: 8 **ID Number:** UN2735 **Packing Group:** PG III

IMDG

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.

Technical Name: Polypropylene glycol bis(aminopropyl) ether

Hazard Class: 8 **ID Number:** UN2735 **Packing Group:** PG III

EMS Number: F-A,S-B

Marine pollutant: Yes

ICAO/IATA

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.

Technical Name: Polypropylene glycol bis(aminopropyl) ether

Hazard Class: 8 **ID Number:** UN2735 **Packing Group:** PG III

Cargo Packing Instruction: 856

Passenger Packing Instruction: 852

Additional Information

MARINE POLLUTANT (Diethyltoluenediamine (DETDA))

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information

Revision

Identification Number: 1079375 / 1001 / Issue Date 08/27/2015 / Version: .0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

Legal disclaimer:

TQ3 urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the printed date. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the production are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific SDS's, we are not and cannot be responsible for SDS's obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.