

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

#### 1.1. Identification

Product form : Mixture  
Product name : Tyfo® HCR, Component B

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

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

FYFE CO, LLC  
3940 Ruffin Road  
Ste. C  
San Diego, CA 92123 - United States  
T (858) 642-0694  
[www.fyfeco.com](http://www.fyfeco.com)

#### 1.4. Emergency telephone number

Emergency number : (800) 424-9300 or (703) 527-3887

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Skin Corr. 1A	H314 -	Causes severe skin burns and eye damage
Skin Sens. 1	H317 -	May cause an allergic skin reaction
STOT SE 3	H335 -	May cause respiratory irritation

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash hands thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P272 - Contaminated work clothing must not be allowed out of the workplace  
P280 - Wear protective gloves, protective clothing, eye protection, face protection  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P302+P352 - If on skin: Wash with plenty of soap and water  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER, a doctor  
P312 - Call a doctor, a POISON CENTER if you feel unwell  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P363 - Wash contaminated clothing before reuse  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up  
P501 - Dispose of contents/container in accordance with local, regional, national and/or international regulation

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### 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. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	GHS-US classification
benzyl alcohol	(CAS No) 100-51-6	40 - 70	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332
1, 2-diaminocyclohexane, mixture of isomers	(CAS No) 694-83-7	15 - 40	Flam. Liq. 4, H227 Skin Corr. 1A, H314 STOT SE 3, H335
Epoxy Resin	(CAS No) 25068-38-6	15 - 40	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411
diethylenetriamine	(CAS No) 111-40-0	3 - 7	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 2 (Inhalation), H330 Skin Corr. 1B, H314 Skin Sens. 1, H317 STOT SE 3, H335
bisphenol A	(CAS No) 80-05-7	1 - 5	Eye Dam. 1, H318 Skin Sens. 1, H317 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	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a doctor.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Burns. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Serious damage to eyes.
Symptoms/injuries after ingestion	: Burns.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.  
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

diethylenetriamine (111-40-0)		
ACGIH	ACGIH TWA (ppm)	1 ppm (Diethylene triamine; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	URT & eye irr

#### 8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Personal protective equipment : Safety glasses. Gloves. Protective clothing.



Hand protection : Protective gloves.  
Eye protection : Safety glasses.  
Skin and body protection : Wear suitable protective clothing.  
Respiratory protection : If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.  
Environmental exposure controls : Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
Color : Pale red-orange  
Odor : mild

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Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 93 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: 1.06
Relative vapor density at 20 °C	: No data available
Solubility	: Insoluble.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>benzyl alcohol (100-51-6)</b>	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Inconclusive, insufficient data)
ATE US (oral)	1620.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
<b>1, 2-diaminocyclohexane, mixture of isomers (694-83-7)</b>	
LD50 oral rat	4556 mg/kg (Rat)
LC50 inhalation rat (mg/l)	> 4.5 mg/l/4h (Rat)

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<b>1, 2-diaminocyclohexane, mixture of isomers (694-83-7)</b>	
ATE US (oral)	4556.000 mg/kg body weight
<b>Epoxy Resin (25068-38-6)</b>	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 420: Acute Oral toxicity – Acute Toxic Class Method; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
<b>diethylenetriamine (111-40-0)</b>	
LD50 oral rat	1553 mg/kg body weight (Rat; Other; Experimental value)
LD50 dermal rabbit	1045 mg/kg body weight (Rabbit; Experimental value; Other)
ATE US (oral)	1553.000 mg/kg body weight
ATE US (dermal)	1045.000 mg/kg body weight
ATE US (gases)	100.000 ppmV/4h
ATE US (vapors)	0.500 mg/l/4h
ATE US (dust, mist)	0.050 mg/l/4h
<b>bisphenol A (80-05-7)</b>	
LD50 oral rat	3300 mg/kg (Rat)
LD50 dermal rabbit	3600 mg/kg (Rabbit)
ATE US (oral)	3300.000 mg/kg body weight
ATE US (dermal)	3600.000 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Burns. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

<b>benzyl alcohol (100-51-6)</b>	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)
<b>Epoxy Resin (25068-38-6)</b>	
LC50 fish 2	2.3 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Experimental value)
EC50 Daphnia 2	1.1 - 2.8 mg/l (EC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
<b>diethylenetriamine (111-40-0)</b>	
LC50 fish 1	430 mg/l (LC50; EU Method C.1; 96 h; Poecilia reticulata; Semi-static system; Fresh water; Experimental value)
EC50 Daphnia 1	64.6 mg/l (EC50; EU Method C.2; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

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<b>diethylenetriamine (111-40-0)</b>	
Threshold limit algae 1	1164 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum; Static system; Fresh water; Experimental value)
Threshold limit algae 2	10 mg/l (NOEC; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum; Static system; Fresh water; Experimental value)
<b>bisphenol A (80-05-7)</b>	
LC50 fish 1	9.9 mg/l (LC50; 96 h)
EC50 Daphnia 1	3.9 mg/l (EC50; 48 h)
Threshold limit algae 1	2.7 - 3.1, EC50; 96 h

### 12.2. Persistence and degradability

<b>benzyl alcohol (100-51-6)</b>	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.6 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.4 g O <sub>2</sub> /g substance
ThOD	2.5 g O <sub>2</sub> /g substance
<b>1, 2-diaminocyclohexane, mixture of isomers (694-83-7)</b>	
Persistence and degradability	Biodegradability in water: no data available.
<b>Epoxy Resin (25068-38-6)</b>	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. Low potential for adsorption in soil.
<b>diethylenetriamine (111-40-0)</b>	
Persistence and degradability	Readily biodegradable in water. Readily biodegradable in the soil. Adsorbs into the soil. Low potential for mobility in soil. Photooxidation in the air.
<b>bisphenol A (80-05-7)</b>	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil. Photolysis in the air. Photodegradation in the air.
Chemical oxygen demand (COD)	0.036 g O <sub>2</sub> /g substance
ThOD	2.5 g O <sub>2</sub> /g substance

### 12.3. Bioaccumulative potential

<b>benzyl alcohol (100-51-6)</b>	
Log Pow	1-1.1, Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>1, 2-diaminocyclohexane, mixture of isomers (694-83-7)</b>	
Log Pow	0.09 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>Epoxy Resin (25068-38-6)</b>	
BCF other aquatic organisms 1	3 - 31 (BCF)
Log Pow	>= 2.918 (Experimental value; EU Method A.8: Partition Coefficient; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>diethylenetriamine (111-40-0)</b>	
BCF fish 1	0.3 - 6.3 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 8 weeks; Cyprinus carpio; Flow-through system; Fresh water; Experimental value; Fresh weight)
Log Pow	-1.58 (Calculated; 20 °C; -5.58; Calculated; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>bisphenol A (80-05-7)</b>	
BCF fish 1	5.1 - 67.7 (BCF)
Log Pow	3.32 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>benzyl alcohol (100-51-6)</b>	
Surface tension	0.04 N/m (20 °C)

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Epoxy Resin (25068-38-6)	
Surface tension	0.0 587-0.0589,20 °C
Log Koc	log Koc,SRC PCKOCWIN v2.0; 2.65; QSAR
diethylenetriamine (111-40-0)	
Log Koc	log Koc,Other; 3.4 - 4.6; Experimental value; GLP
Ecology - soil	Soil contaminant.

### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with local, state, and federal regulations.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1760 Corrosive liquids, n.o.s. (Alkaline Amine), 8, III

UN-No.(DOT) : UN1760

Proper Shipping Name (DOT) : Corrosive liquids, n.o.s.  
(Alkaline Amine)

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Other information : No supplementary information available.

### TDG

No additional information available

### Transport by sea

UN-No. (IMDG) : 1760

Proper Shipping Name (IMDG) : CORROSIVE LIQUID, N.O.S.

Class (IMDG) : 8 - Corrosive substances

Packing group (IMDG) : III - substances presenting low danger

### Air transport

UN-No. (IATA) : 1760

Proper Shipping Name (IATA) : Corrosive liquid, n.o.s.

Class (IATA) : 8 - Corrosives

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Packing group (IATA)

: III - Minor Danger

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### benzyl alcohol (100-51-6)

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

##### 1, 2-diaminocyclohexane, mixture of isomers (694-83-7)

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

##### Epoxy Resin (25068-38-6)

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

EPA TSCA Regulatory Flag

XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e., Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).

##### diethylenetriamine (111-40-0)

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

##### bisphenol A (80-05-7)

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

Subject to reporting requirements of United States SARA Section 313

#### 15.2. International regulations

##### CANADA

No additional information available

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. US State regulations

##### bisphenol A (80-05-7)

U.S. - California -  
Proposition 65 -  
Carcinogens List

U.S. - California -  
Proposition 65 -  
Developmental Toxicity

U.S. - California -  
Proposition 65 -  
Reproductive Toxicity -  
Female

U.S. - California -  
Proposition 65 -  
Reproductive Toxicity -  
Male

Non-significant risk  
level (NSRL)

No

No

Yes

Yes

##### diethylenetriamine (111-40-0)

U.S. - New Jersey - Right to Know Hazardous Substance List

##### bisphenol A (80-05-7)

U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information



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Full text of H-phrases:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhalation) Category 2
Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H411	Toxic to aquatic life with long lasting effects

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*