

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

1.1. Identification

Product form : Mixture
Product name : Tyfo® SW-1, Component B

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

Use of the substance/mixture : For professional use only

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

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

Flam. Liq. 4	H227 -	Combustible liquid
Acute Tox. 4 (Oral)	H302 -	Harmful if swallowed
Acute Tox. 4 (Inhalation:dust,mist)	H332 -	Harmful if inhaled
Skin Corr. 1A	H314 -	Causes severe skin burns and eye damage
Skin Sens. 1	H317 -	May cause an allergic skin reaction

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H227 - Combustible liquid
H302+H332 - Harmful if swallowed or if inhaled
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction

Precautionary statements (GHS-US) : P210 - Keep away from hot surfaces, heat, open flames, sparks. - No smoking
P260 - Do not breathe dust, fume, gas, mist, spray, vapors
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
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+P312 - If swallowed: Call a POISON CENTER if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of a doctor
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 POISON CENTER, a doctor if you feel unwell
P330 - Rinse mouth
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

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P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use dry extinguishing powder, carbon dioxide (CO₂), foam, Water spray to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local, regional, national and/or international regulation

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	15 - 40	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332
4-nonylphenol, branched	(CAS No) 84852-15-3	15 - 40	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1, 2-diaminocyclohexane, mixture of isomers	(CAS No) 694-83-7	3 - 7	Flam. Liq. 4, H227 Skin Corr. 1A, H314 STOT SE 3, H335
2,4,6-tris(dimethylaminomethyl)phenol	(CAS No) 90-72-2	1 - 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315
tetraethylenepentamine	(CAS No) 112-57-2	1 - 5	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1A, H314 Skin Sens. 1, H317 Aquatic Chronic 2, H411

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 poison center/doctor/physician if you feel unwell.
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 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

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

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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.

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. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Do not breathe dust, gas, fume, mist, spray, vapors.

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. Notify authorities if product enters sewers or public waters.

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 : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Do not breathe dust, fume, gas, mist, spray, vapors.

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 in a well-ventilated place. Keep cool. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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 : In case of inadequate ventilation wear respiratory protection.

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

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Color	: Mixture contains one or more component(s) which have the following colour(s): Colourless Light yellow Colourless to yellow Amber to red-brown Yellow
Odor	: There may be no odor warning properties, odor is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odor(s): Fruity odor Aromatic odor Mild odor Phenol odor Amine-like odor Ammonia odor
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	: 74 °C closed cup
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	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
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

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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 : Oral: Harmful if swallowed. Inhalation:dust,mist: Harmful if inhaled.

Tyfo® SW-1, Component B	
ATE US (oral)	1663.561 mg/kg body weight
ATE US (dust, mist)	3.750 mg/l/4h
benzyl alcohol (100-51-6)	
LD50 oral rat	1620 mg/kg (Rat; Experimental value)

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benzyl alcohol (100-51-6)	
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
4-nonylphenol, branched (84852-15-3)	
LD50 oral rat	1882 mg/kg (Rat; Other; Experimental value; 1412 mg/kg bodyweight; Rat; Experimental value)
ATE US (oral)	1882.000 mg/kg body weight
1, 2-diaminocyclohexane, mixture of isomers (694-83-7)	
LD50 oral rat	4556 mg/kg (Rat)
LC50 inhalation rat (mg/l)	> 4.5 mg/l/4h (Rat)
ATE US (oral)	4556.000 mg/kg body weight
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	1200 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 2169 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Literature study; Other; >1 ml/kg; Rat; Experimental value)
ATE US (oral)	1200.000 mg/kg body weight
tetraethylenepentamine (112-57-2)	
LD50 oral rat	3990 mg/kg (Rat; Literature study; 3250 mg/kg bodyweight; Rat; Literature study)
LD50 dermal rabbit	660 mg/kg (Rabbit; Literature study; 660-1260 mg/kg bodyweight; Rabbit; Literature study)
ATE US (oral)	500.000 mg/kg body weight
ATE US (dermal)	660.000 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) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

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.

Tyfo® SW-1, Component B	
LC50 fish 1	460 mg/l Benzyl alcohol Mortality
LC50 fish 2	0.13825 mg/l 4-Nonlpheno Mortality
benzyl alcohol (100-51-6)	
LC50 fish 1	460 mg/l (LC50; EPA OPP 72-1; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)
4-nonylphenol, branched (84852-15-3)	
EC50 Daphnia 2	0.085 mg/l (EC50; ASTM E729-88; 48 h; Daphnia magna; Semi-static system; Fresh water; Experimental value)

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4-nonylphenol, branched (84852-15-3)	
Threshold limit algae 2	0.027 mg/l (EC50; EPA OTS 797.1050; 96 h; Skeletonema costatum; Static system; Salt water; Experimental value)

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
EC50 Daphnia 2	41.3 mg/l (LC50; 48 h; Daphnia magna)
Threshold limit algae 2	84 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Scenedesmus subspicatus; Static system; Fresh water; Experimental value)

tetraethylenepentamine (112-57-2)	
EC50 Daphnia 1	24.1 mg/l (EC50; EU Method C.2; 48 h; Daphnia magna; Static system)
LC50 fish 2	420 mg/l (LC50; EU Method C.1; 96 h; Poecilia reticulata; Semi-static system; Fresh water; Experimental value)
Threshold limit algae 1	0.5 mg/l (NOEC; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum)
Threshold limit algae 2	6.8 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum)

12.2. Persistence and degradability

benzyl alcohol (100-51-6)	
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 ₂ /g substance
Chemical oxygen demand (COD)	2.4 g O ₂ /g substance
ThOD	2.5 g O ₂ /g substance

4-nonylphenol, branched (84852-15-3)	
Persistence and degradability	Inherently biodegradable. Biodegradability in soil: no data available. Adsorbs into the soil. Photodegradation in the air.

1, 2-diaminocyclohexane, mixture of isomers (694-83-7)	
Persistence and degradability	Biodegradability in water: no data available.

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Persistence and degradability	Not readily biodegradable in water. Highly mobile in soil. Low potential for adsorption in soil.

tetraethylenepentamine (112-57-2)	
Persistence and degradability	Not readily biodegradable in water. Low potential for mobility in soil. Adsorbs into the soil.

12.3. Bioaccumulative potential

benzyl alcohol (100-51-6)	
Log Pow	1-1.1, Experimental value; Other; 20 °C
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

4-nonylphenol, branched (84852-15-3)	
BCF fish 1	271 (BCF; 480 h; Pimephales promelas)
BCF fish 2	1200/1300, BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 32 days; Gasterosteus aculeatus; Flow-through system; Salt water; Experimental value; Fresh weight
Log Pow	3.28 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 5.4; Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

1, 2-diaminocyclohexane, mixture of isomers (694-83-7)	
Log Pow	0.09 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Log Pow	0.77 (Literature; 0.219; Experimental value; Equivalent or similar to OECD 107; 21.5 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

tetraethylenepentamine (112-57-2)	
BCF other aquatic organisms 1	4.2 (BCF)
Log Pow	-3.16 (Calculated; EPIWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

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benzyl alcohol (100-51-6)	
Surface tension	0.04 N/m (20 °C)
4-nonylphenol, branched (84852-15-3)	
Log Koc	log Koc,Other; >= 4.35 - <= 5.69; Experimental value; GLP
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Log Koc	Koc,SRC PCKOCWIN v2.0; 20.98; QSAR; log Koc; 1.32; Calculated value

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 : in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1760 Corrosive liquids, n.o.s. (The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading), 8, III

UN-No.(DOT) : UN1760

Proper Shipping Name (DOT) : Corrosive liquids, n.o.s.
The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading

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

Marine pollutant : Yes (IMDG only)



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 Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

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

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

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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

Transport document description : UN1760 CORROSIVE LIQUID, N.O.S. (Alkaline Amine), 8, III

UN-No. (TDG) : UN1760

TDG Proper Shipping Name : CORROSIVE LIQUID, N.O.S. (Alkaline Amine)

TDG Primary Hazard Classes : 8 - Class 8 - Corrosives

Packing group : III - Minor Danger

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

No additional information available

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

4-nonylphenol, branched (84852-15-3)

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

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)

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

tetraethylenepentamine (112-57-2)

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

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

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U.S. - California - Proposition 65 - Other information

No ingredient regulated by CA Prop 65 present.

tetraethylenepentamine (112-57-2)

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

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SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
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
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H332	Harmful if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
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