

# FlowLogic U

Version 2.1

Date revised: 8/14/2015

Conforms to regulation (EC) no. EU 453/2010

## SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

**Product Name:** FlowLogic U **Product Numbers:** SG-BXX-19; SG-BXX-05; SG-BXX-06

### 1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users.

### 1.3 Details of the Supplier of the Safety Data Sheet

#### Supplier

LabLogic Systems, Inc.  
1911 N US HWY 301  
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Tampa  
FL 33619  
USA  
E-mail: solutions@lablogic.com

### 1.4 Emergency Telephone Number

Tel: +1 813-626-6848

## SECTION 2 – HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

**H302** – Acute Toxicity-Oral (Category 4)

**H305** – Aspiration Hazard (Category 2)

**H315** – Skin Corrosion/Irritation (Category 2)

**H319** – Serious Eye Damage/Eye Irritation (Category 2A)

**H411** – Chronic Hazards to the Aquatic Environment (Category 2)



EXPERIENCE & EXPERTISE

## 2.2 Label Elements

### GHS LABEL ELEMENTS AND CLASSIFICATION

#### GHS Label Elements



#### WARNING

**H302** – Harmful if swallowed

**H305** – May be harmful if swallowed and enters airways.

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H411** – Toxic to aquatic life with long lasting effects.

**P262** – Do not get into eyes, on skin or on clothing.

**P273** – Avoid release to the environment.

**P305+P351+P338** – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

**P308+P313** – IF exposed or concerned: Call a POISON CENTER or doctor/physician.

**P337+P313** – IF eye irritation persists: Get medical advice/attention.

## 2.3 Other Hazards

None found.

## SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixture

#### Chemical Names/Description

Blend of scintillators in chiral phenylalkanes.

#### Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
Phenyl Xylyl Ethane (PXE)	50 - 70	6196-95-8	228-249-2	H304, H315, H319
Primary Alcohol Ethoxylate	5 - 10	68439-46-3	614-482-0	H318
Linear alkyl phenyl ethoxylates	20 - 30	9016-45-9	500-024-6	H315, H319, H411
Butoxy Ethanol	5 - 10	111-76-2	203-905-0	H302, H312, H315, H319, H332

## SECTION 4 – FIRST AID MEASURES

### 4.1 Description of First Aid Measures

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

#### Ingestion

DO NOT INDUCE VOMITING. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

## Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

## Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## 4.2 Most Important Symptoms and Effects, Both Acute and Delayed

### Inhalation

**Phenyl Xylyl Ethane (PXE):** Sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure. May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

**Primary Alcohol Ethoxylate:** Sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure. May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

**Linear alkyl phenyl ethoxylates:** Discomfort in nose and throat, nasal discharge, coughing, difficulty breathing.

**Butoxy Ethanol:** Burning in nose and throat, coughing. Headache, dizziness, drowsiness, fatigue, nausea.

### Ingestion

**Phenyl Xylyl Ethane (PXE):** Salivation, pain, nausea, vomiting and diarrhea. Exposure may also cause central nervous system symptoms similar to those listed under Inhalation.

**Primary Alcohol Ethoxylate:** Salivation, pain, nausea, vomiting and diarrhea. Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation."

**Linear alkyl phenyl ethoxylates:** Abdominal discomfort, nausea, and diarrhea.

**Butoxy Ethanol:** Headache, dizziness, drowsiness, fatigue, nausea, vomiting.

## Skin

**Phenyl Xylyl Ethane (PXE):** Drying, reddening, itching, and cracking. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

**Primary Alcohol Ethoxylate:** Drying, reddening, itching, and cracking. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

**Linear alkyl phenyl ethoxylates:** Local redness and swelling.

**Butoxy Ethanol:** Redness, pain and itching.

## Eyes

**Phenyl Xylyl Ethane (PXE):** Redness, tearing, and blurred vision.

**Primary Alcohol Ethoxylate:** Redness, tearing, and blurred vision.

**Linear alkyl phenyl ethoxylates:** Excess blinking and tear production. Marked redness and swelling of the eye with injury to the cornea.

**Butoxy Ethanol:** Redness, tearing, and pain.

## 4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable.

## SECTION 5 – FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

### 5.2 Special Hazards Arising from the Substance/Mixture

**Hazardous Combustion Products** – Thermal decomposition products may include carbon monoxide, carbon dioxide, and hydrocarbons.

**Hazardous Decomposition Products** – Combustion may produce toxic oxides of carbon and reactive hydrocarbons.

**Hazardous Polymerization** – Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

### 5.3 Advice for Firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### 5.4 Further Information

No data available.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

### 6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

### 6.3 Methods and Materials for Containment and Cleaning Up

Eliminate source of ignition. Ventilate area. Cover with absorbent material (soda ash) to confine spill and sweep or shovel into container. Close container tightly. Avoid breathing vapours.

### 6.4 References to Other Sections

For disposal information, see Section 13. For Protective clothing and equipment, see Section 8.

## SECTION 7 – HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Transfer methods should avoid static sparks. Do not eat, drink, or smoke in areas of use or storage.

### 7.2 Conditions for Safe Storage (including any incompatibles)

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat or ignition. Protect from physical damage.

#### Incompatibles

**Phenyl Xylyl Ethane (PXE):** Oxidizing agents.

**Primary Alcohol Ethoxylate:** Strong oxidizing agents. Aluminum surfaces at temperatures above 120 degrees.

**Linear alkyl phenyl ethoxylates:** Oxidizing agents.

**Butoxy Ethanol:** Strong oxidizing agents. Strong bases and salts of strong bases at elevated temperatures. Aluminum surfaces.

### 7.3 Specific End Uses

Investigational research by professional users.



## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

### 8.1 Control Parameters

**Component:** Phenyl Xylyl Ethane (PXE)

**ACGIH Threshold Limit Value (TLV):** None established

**OSHA Permissible Exposure Limit (PEL):** None established

**Component:** Primary Alcohol Ethoxylate

**ACGIH Threshold Limit Value (TLV):** None established

**OSHA Permissible Exposure Limit (PEL):** None established

**Component:** Linear alkyl phenyl ethoxylates

**ACGIH Threshold Limit Value (TLV):** None established

**OSHA Permissible Exposure Limit (PEL):** None established

**Component:** Butoxy Ethanol

**ACGIH Threshold Limit Value (TLV):** 25 ppm (skin)

**OSHA Permissible Exposure Limit (PEL):** 25 ppm

### 8.2 Exposure Controls

#### Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

#### Respiratory Protection

For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

#### Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

#### Skin Protection

Wear protective gloves and clean body covering clothing.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear solution	l. Vapor Density (Air = 1)	Not determinable
b. Odor	Odorless	m. Relative Density	0.91
c. Odor Threshold	N.A.	n. Water Solubility	Slightly soluble
d. pH	N.A.	o. Partition Coefficient n-octanol/water	Mixture
e. Melting/Freezing Point (°C)	0	p. Autoignition Temperature (°C)	> 375
f. Boiling point (°C)	302-318	q. Decomposition Temperature (°C)	N/A
g. Flash Point (°C)	91	r. Viscosity	N/D
h. Evaporation Rate	Not measureable	s. Explosive Properties	Can be made to burn
i. Flammability	N/A	t. Oxidizing Properties	Not an oxidizer
j. Upper/Lower Flammability or Explosive Limits	N/D		
k. Vapor Pressure	< 0.1		

## SECTION 10 – STABILITY AND REACTIVITY

### 10.1 Reactivity

Material can be made to burn; combustion is generally not self-sustaining. Reacts with oxidizers.

### 10.2 Chemical Stability

Stable under ordinary conditions of use and storage.

### 10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

### 10.4 Conditions to Avoid

Heat, sources of ignition.

### 10.5 Incompatible Materials

**Phenyl Xylyl Ethane (PXE):** Oxidizing agents.

**Primary Alcohol Ethoxylate:** Strong oxidizing agents. Aluminum surfaces at temperatures above 120 degrees.

**Linear alkyl phenyl ethoxylates:** Oxidizing agents.

**Butoxy Ethanol:** Strong oxidizing agents. Strong bases and salts of strong bases at elevated temperatures. Aluminum surfaces.

### 10.6 Hazardous Decomposition Products

Combustion may produce toxic oxides of carbon and reactive hydrocarbons.

## SECTION 11 – TOXICOLOGICAL INFORMATION

### Product LD50 Values

#### Oral Rat LD50 (mg/kg)

No Data

#### Dermal Rabbit LD50 (mg/kg)

No Data

### Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Phenyl Xylyl Ethane (PXE)	No	No	None
Primary Alcohol Ethoxylate	No	No	None
Linear alkyl phenyl ethoxylates	No	No	None
Butoxy Ethanol	No	No	None

### Potential Health Effects

#### Inhalation

**Phenyl Xylyl Ethane (PXE)** – Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs.

**Primary Alcohol Ethoxylate** – Information not found.

**Linear alkyl phenyl ethoxylates** – Vapours or mist, especially as generated from heating the material or as from exposure in poorly ventilated areas or confined spaces, may be irritating and cause discomfort in nose and throat. Prolonged exposure may cause difficulty breathing.

**Butoxy Ethanol** – Vapours may cause irritation to the nose, throat, and respiratory tract and are toxic if inhaled.

## Ingestion

**Phenyl Xylyl Ethane (PXE)** – May cause irritation of the mouth, throat, and gastrointestinal tract. Exposure may also cause central nervous system symptoms.

**Primary Alcohol Ethoxylate** – Moderately toxic by ingestion.

**Linear alkyl phenyl ethoxylates** – May be harmful by ingestion.

**Butoxy Ethanol** – Moderately toxic if ingested.

## Skin

**Phenyl Xylyl Ethane (PXE)** – May cause skin irritation.

**Primary Alcohol Ethoxylate** – Severely irritating to the skin and moderately toxic if absorbed through the skin.

**Linear alkyl phenyl ethoxylates** – Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort.

**Butoxy Ethanol** – Product is mildly irritating to the skin and toxic if absorbed through the skin.

## Eyes

**Phenyl Xylyl Ethane (PXE)** – Exposure to vapours, fumes or mists may cause irritation. Direct contact may cause irritation.

**Primary Alcohol Ethoxylate** – Severely irritating to the eyes.

**Linear alkyl phenyl ethoxylates** – Causes irritation and possible injury to the cornea.

**Butoxy Ethanol** – Causes severe eye irritation.

## Carcinogenicity

**Phenyl Xylyl Ethane (PXE)** – Not listed by NTP or IARC as a known or possible carcinogen.

**Primary Alcohol Ethoxylate** – No information available.

**Linear alkyl phenyl ethoxylates** – Not listed by NTP or IARC as a known or possible carcinogen.

**Butoxy Ethanol** – Not listed as a known or anticipated carcinogen by NTP or IARC.

## Mutagenicity

**Phenyl Xylyl Ethane (PXE)** – No information available.

**Primary Alcohol Ethoxylate** – No information available.

**Linear alkyl phenyl ethoxylates** – No information available.

**Butoxy Ethanol** – No information found.

## Reproductive Toxicity

**Phenyl Xylyl Ethane (PXE)** – No information available.

**Primary Alcohol Ethoxylate** – No information available.

**Linear alkyl phenyl ethoxylates** – No information available.

**Butoxy Ethanol** – Inhalation exposure of pregnant rabbits caused some lethality to the dam and fetus at 200 ppm, but there were no effects at 100 ppm and below. Inhalation exposure to pregnant rats caused irritancy to the dams and related fetotoxicity at 200 and 100 ppm, but there were no effects at 50 ppm and below.

## Teratogenic Effects

**Phenyl Xylyl Ethane (PXE)** – No information available.

**Primary Alcohol Ethoxylate** – No information available.

**Linear alkyl phenyl ethoxylates** – No information available.

**Butoxy Ethanol** – Has not been shown to cause birth defects.

## Routes of Entry

**Phenyl Xylyl Ethane (PXE)** – Ingestion, inhalation, skin contact.

**Primary Alcohol Ethoxylate** – Inhalation, ingestion, skin contact.

**Linear alkyl phenyl ethoxylates** – Ingestion, inhalation.

**Butoxy Ethanol** – Inhalation, ingestion, skin contact.

## Target Organ Statement

**Phenyl Xylyl Ethane (PXE)** – No information available.

**Primary Alcohol Ethoxylate** – No information available.

**Linear alkyl phenyl ethoxylates** – No information available.

**Butoxy Ethanol** – Pre-existing skin, eye, and lung disorders may be aggravated by exposure.

## SECTION 12 – ECOLOGICAL INFORMATION

### 12.1 Toxicity

**COMPONENT:** Phenyl Xylyl Ethane (PXE)

	Vetebrates	Invertebrates	Algae	Micro-organisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Anthropods	Plants	Micro-organisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

**COMPONENT:** Primary Alcohol Ethoxylate

	Vetebrates	Invertebrates	Algae	Micro-organisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Anthropods	Plants	Micro-organisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

**COMPONENT:** Linear alykyl phenyl ethoxylates

	Vetebrates	Invertebrates	Algae	Micro-organisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	LC50 (48 hrs daphnia) 1.821 mg/L	EC50 (48 hrs) 20 mg/L	No data

	Birds	Anthropods	Plants	Micro-organisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data



**COMPONENT:** Butoxy Ethanol

	Vetebrates	Invertebrates	Algae	Micro-organisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96 hr, trout) 1464 mg/L	LC50 (48 hrs daphnia) 1800 mg/L	EC50 (72 hrs) 911 mg/L	Toxicity Threshold 483 mg/L

	Birds	Anthropods	Plants	Micro-organisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

## 12.2 Persistence and Degradability

**Phenyl Xylyl Ethane (PXE)** – No data

**Primary Alcohol Ethoxylate** – No data

**Linear alkyl phenyl ethoxylates** – Readily biodegradable >97% elimination in 30 days

**Butoxy Ethanol** – Readily biodegradable (90% in 28 days)

## 12.3 Bioaccumulative Potential

**Phenyl Xylyl Ethane (PXE)** – No data

**Primary Alcohol Ethoxylate** – No data

**Linear alkyl phenyl ethoxylates** – No data

**Butoxy Ethanol** – No data

## 12.4 Mobility in Soil

**Phenyl Xylyl Ethane (PXE)** – No data

**Primary Alcohol Ethoxylate** – No data

**Linear alkyl phenyl ethoxylates** – No data

**Butoxy Ethanol** – No data

## 12.5 Results of PBT and vPvB Assessment

**Phenyl Xylyl Ethane (PXE)** – No data

**Primary Alcohol Ethoxylate** – No data

**Linear alkyl phenyl ethoxylates** – Substance is PBT / vPvB

**Butoxy Ethanol** – Not PBT/vPvB

## 12.6 Other Adverse Effects

**Phenyl Xylyl Ethane (PXE)** – None

**Primary Alcohol Ethoxylate** – None

**Linear alkyl phenyl ethoxylates** – None

**Butoxy Ethanol** – None

## SECTION 13 – DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

## SECTION 14 – TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	N/A	N/A	UN3082	N.A.
14.2 Shipping Name	N/A	Not regulated	Environmentally Hazardous Substance, Liquid, N.O.S.	Not regulated
14.3 Hazard Class	N/A	N/A	9	N/A
14.4 Packing Group	N/A	N/A	III	N/A
14.5 Environmental Hazards	N/A	N/A	Marine pollutant	N/A
14.6 Special Precautions	N/A	N/A	N/A	N/A

## SECTION 15 – REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

#### United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

#### SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
Phenyl Xylyl Ethane (PXE)	No	No	No	Yes	No
Primary Alcohol Ethoxylate	No	No	No	Yes	No
Linear alkyl phenyl ethoxylates	No	No	No	Yes	No
Butoxy Ethanol	Yes	No	No	Yes	No

#### Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

## SECTION 16 – OTHER INFORMATION

### Revisional Updates

8/14/2015 – Updated Sections 14.1, 14.2, 14.3 and 14.4

5/29/2015 – Updated Sections 2.1 and 3.2

8/5/2013 – Released Version 1.0

### NFPA Codes

Health 1 Flammability 1 Reactivity 0

### Dangers

#### Phenyl Xylyl Ethane (PXE)

**H304** – May be fatal if swallowed and enters airways.

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

#### Primary Alcohol Ethoxylate

**H318** – Causes serious eye damage.

#### Linear alkyl phenyl ethoxylates

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H411** – Toxic to aquatic life with long lasting effects.

#### Butoxy Ethanol

**H302** – Harmful if swallowed

**H312** – Harmful in contact with skin.

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H332** – Harmful if inhaled.

**MANUFACTURER DISCLAIMER:** The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending licence under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

### USA & Canada

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Certificate No: 10926  
ISO 9001

Version 2.1 August 2015

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