SAFETY DATA SHEET

1. Identification

Product Identifier	**Lightning**	
Other means of identification		
Product code	FC-4057	
Recommended use	Heavy duty degreaser.	
Recommended restrictions	None.	
Manufacturer/supplier/distributor/importer information		
Company name	Full Circle Chemical Company	
Address	1493 Iron St. North Kansas City, MO 64116	
Telephone	(866) 424-3648	
Emergency phone number	PERS 24 hour Emergency	(800) 633-8253 (800) 633-8253

2. Hazard(s) Identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage. Skin irritant.	Category 1 Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not listed.	
Label elements		



Signal word	Danger
Hazard statement	Causes serious eye damage. Causes skin irritation
Precautionary statement	
Prevention	Wear eye protection/face protection. Wash hands and exposed skin thoroughly after handling. Wear protective gloves.
Response	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/doctor/medical professional. IF ON SKIN: Wash with plenty of water for at least 15 minutes. Specific treatment (see section 4 on the Safety Data Sheet). If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	
Disposal	
Hazard(s) not otherwise classified (HNOC)	None.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
2-butoxyethanol	111-76-2	10-15
Nonylphenol ethoxylate	127087-87-0	1-5
C8-10 ethoxylate phosphate	68130-47-2	1-5
Sodium xylene sulfonate	1300-72-7	1-5
Potassium hydroxide	1310-58-3	0.1-1
Other components below reportable levels		90-100

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention. Eye wash stations should be located in work area.
Ingestion	Rinse mouth. Get medical attention if symptoms occur. Do not induce vomiting.
Most important symptoms/effects, acute and delayed	Dermatitis. Rash. May cause an allergic skin reaction.
Indication of immediate medical attention and special treatment needed	Provide general support measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2)
Unsuitable extinguishing media	None known
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protecting clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate protective equipment and clothing during clean-up. Wear eye/face protection.
Methods and materials for containment and cleaning up	Caution – spillages may be slippery. Large spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Small spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to

remove residual contamination.

Never return spills to original container for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Do not release into the environment (see section 12). Avoid discharge into areas not consistent with package labeling.

7. Handling and storage

Precautions for safe handling Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Do not store in extreme conditions.

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2-butoxyethanol	PEL	50 ppm
Potassium hydroxide	PEL	2 mg/m^3

US ACGIH Threshold Limit Values

Components	Type	Value
2-butoxyethanol	STEL	20 ppm
Potassium hydroxide	STEL	2 mg/m^3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Species	Sampling Time
2-butoxyethanol	200 mg/g	Creatinine	Urine	End of shift.

Appropriate engineering controls Emergency eye wash stations and showers should be readily accessible. Provide natural or mechanical ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear long sleeve shirts with pants.

Respiratory protection Respiratory protection not required.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke or use chewing tobacco. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical State Liquid.

Color Purple.

Odor	Pine.
Odor threshold	Not available.
pH	12-13
Melting/freezing point	26°F (-3.3°C)
Initial boiling point and boiling range	>212°F (100°C)
Flash point	>212°F (100°C)
Evaporation rate	Not available.
Flammability	Not available.
Flammability Limits	
Upper	Not available.
Lower	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity (water=1)	1.01
Solubility in water	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Decomposes on heating.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	This product is stable and non-reactive under normal conditions of use.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames can cause product to decompose.
Incompatible materials	Strong acids, strong bases, strong oxidizing agents.
Hazardous decomposition products	Aldehydes, ketones, organic acids, carbon dioxide, carbon monoxide.

11. Toxicological information

Information on likely routes of exposure	
Ingestion	Corrosive to mucous membranes, will damage tissue if there is prolonged contact.
Inhalation	Expected to be a low inhalation hazard.
Skin contact	Repeated and/or prolonged skin contact may cause irritation and/or burns.
Eye contact	Causes severe eye damage. May cause severe corneal injury.
Symptoms related to the physical, chemical and toxicological characteristics	Dermatitis. Rash. May cause an allergic skin reaction.
Acute toxicity	Expected to have a low toxicity.

Product	**Route and Species**	**LD50**
Lightning (CAS mixture)		
Acute	*Oral*, rat	5,000 mg/kg estimated
	Dermal, rabbit	>5,000 mg/kg

*Estimates for product may be based on additional component data not shown

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/ irritation	Causes serious eye damage.
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not considered a carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not Listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity – single exposure	Not classified.
Specific target organ toxicity – repeated exposure	Not classified.
Aspiration hazard	Not considered an aspiration hazard.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
Lightning (CAS mixture)		
Aquatic		
Crustacea	Daphnia	EC_{50}(48hr): 523 mg/L estimated
Fish	Fathead	LC_{50}(96hr): 213 mg/L estimated

*Estimates for product may be based on additional component data not shown

Persistence and degradability	Nonylphenyl ethoxylate: not considered readily biodegradable, but doesn't mean this material isn't biodegradable under certain environmental conditions.
Bioaccumulative potential	No data available.
Mobility in soil	Not available.
Other adverse effects	The pH of this product may cause it to be toxic to aquatic and terrestrial organisms.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Do not release to the environment.
Local disposal regulations	Dispose in accordance with all applicable regulations
Waste from residues/unused product	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may contain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1760

UN proper shipping name	Corrosive Liquids, n.o.s. (Contains: Potassium Hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packaging group	III
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not intended to be transported in bulk.

DOT



15. Regulatory information

US federal regulations .

SARA 302 Extremely hazardous substance

Not listed.

SARA 304 Emergency release notification

Not listed.

SARA 311/312 Hazard Categories

Immediate Hazard - Yes

Delayed Hazard – No

Fire Hazard – No

Pressure Hazard – No

Reactivity Hazard – No

SARA 313 (TRI reporting)

2-butoxyethanol (Glycol Ether Category)

16. Other information, including date of preparation or last revision

Issue date	2/10/2015
Revision date	4/11/2018
Version #	1
HMIS® ratings	Health: 2 Flammability: 0 Physical hazard: 0

NFPA ratings	Health: 2 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, and have been obtained from resources believed to be reliable. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information related only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified by the text.
Revision information	First issue.