Material Safety Data Sheet

Unlock

1. Product and company identification

Product name	:	Unlock
Supplier	:	Betco Corporation 1001 Brown Avenue Toledo, Ohio 43607 (800) 333-2156
Manufacturer	:	Betco Corporation 1001 Brown Avenue Toledo, Ohio 43607
Code	:	888
MSDS #	:	888
Validation date	:	8/13/2012.
Print date	:	8/13/2012.
In case of emergency	:	Chemtrec (800) 424-9300
Product type	:	Liquid.

2. Hazards identification

Emergency overview

Physical state	:	Liquid.
Color	:	Clear.
Odor	:	Characteristic.
Signal word	:	DANGER!
Hazard statements	:	CORROSIVE. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Precautionary measures	:	Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container closed. Wash thoroughly after handling.
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Routes of entry	:	Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	:	Toxic by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	:	Toxic if swallowed.
Skin	:	Toxic in contact with skin. Severely irritating to the skin.
Eyes	:	Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects	:	Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Target organs	:	Contains material which may cause damage to the following organs: blood, kidneys, the nervous system, liver, lymphatic system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, testes.

2. Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Ethanolamine	141-43-5	10 - 20
Ethylene glycol monobutyl ether	111-76-2	10 - 20
BENZYL ALCOHOL	100-51-6	1 - 5
potassium hydroxide	1310-58-3	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. In case of contact with eyes, rinse immediately with plenty of water.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/oxides

5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
Ethanolamine	**ACGIH TLV (United States, 2/2010).** TWA: 3 ppm 8 hour(s). TWA: 7.5 mg/m³ 8 hour(s). STEL: 6 ppm 15 minute(s). STEL: 15 mg/m³ 15 minute(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 3 ppm 8 hour(s). TWA: 8 mg/m³ 8 hour(s). STEL: 6 ppm 15 minute(s). STEL: 15 mg/m³ 15 minute(s).

8. Exposure controls/personal protection

	NIOSH REL (United States, 6/2009). TWA: 3 ppm 10 hour(s). TWA: 8 mg/m³ 10 hour(s). STEL: 6 ppm 15 minute(s). STEL: 15 mg/m³ 15 minute(s). **OSHA PEL (United States, 6/2010).** TWA: 3 ppm 8 hour(s). TWA: 6 mg/m³ 8 hour(s).
Ethylene glycol monobutyl ether	**OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hour(s). TWA: 120 mg/m³ 8 hour(s). **NIOSH REL (United States, 6/2009). Absorbed through skin.** TWA: 5 ppm 10 hour(s). TWA: 24 mg/m³ 10 hour(s). **ACGIH TLV (United States, 2/2010).** TWA: 20 ppm 8 hour(s). **OSHA PEL (United States, 6/2010). Absorbed through skin.** TWA: 50 ppm 8 hour(s). TWA: 240 mg/m³ 8 hour(s).
BENZYL ALCOHOL	**AIHA WEEL (United States, 5/2010).** TWA: 10 ppm 8 hour(s).
potassium hydroxide	**ACGIH TLV (United States).** TWA: 2 mg/m³ **OSHA PEL (United States).** CEIL: 2 mg/m³ **ACGIH TLV (United States, 2/2010).** C: 2 mg/m³ **OSHA PEL 1989 (United States, 3/1989).** CEIL: 2 mg/m³ **NIOSH REL (United States, 6/2009).** TWA: 2 mg/m³ 10 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): butyl rubber

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal protective equipment (Pictograms) :

9. Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: >100°C (>212°F)

Color : Clear.

Odor : Characteristic.

pH : 13 to 14

Relative density : 1.014

Dispersibility properties : Easily dispersible in the following materials: cold water and hot water.

Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials:
acids

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

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
potassium hydroxide	LD50 Oral	Rat	273 mg/kg	-
BENZYL ALCOHOL	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1230 mg/kg	-
Ethylene glycol monobutyl ether	LC50 Inhalation Gas.	Rat	450 ppm	4 hours
	LD50 Dermal	Rabbit	220 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-
Ethanolamine	LD50 Oral	Rat	1720 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation

11. Toxicological information

potassium hydroxide	Eyes - Severe irritant	Rabbit	-	-	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 1 milligrams	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 milligrams	-
	Skin - Severe irritant	Human	-	24 hours 50 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 milligrams	-
BENZYL ALCOHOL	Skin - Mild irritant	Man	-	48 hours 16 milligrams	-
	Skin - Moderate irritant	Pig	-	100 Percent	-
	Skin - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
Ethylene glycol monobutyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
Ethanolamine	Eyes - Severe irritant	Rabbit	-	250 Micrograms	-
	Skin - Moderate irritant	Rabbit	-	505 milligrams	-

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethylene glycol monobutyl ether	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
potassium hydroxide	Acute LC50 80000 ug/L Fresh water	Fish - Gambusia affinis - Adult	96 hours
BENZYL ALCOHOL	Acute LC50 10000 ug/L Fresh water	Fish - Lepomis macrochirus - 33 to 75 mm	96 hours
Ethylene glycol monobutyl ether	Acute EC50 >1000 mg/L Fresh water	Daphnia - Daphnia magna - <24 hours	48 hours
	Acute LC50 800000 ug/L Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 ug/L Marine water	Fish - Menidia beryllina - 40 to 100 mm	96 hours

12. Ecological information

Ethanolamine	Acute EC50 80000 ug/L Fresh water Acute LC50 >100000 ug/L Marine water Acute LC50 150 mg/L Fresh water	Algae - Isochrysis galbana Crustaceans - Crangon crangon - Adult Fish - Oncorhynchus mykiss - Yolk-sac fry	96 hours 48 hours 96 hours

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		-
TDG Classification	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		-
Mexico Classification	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		-
ADR/RID Class	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		**Tunnel code** (E)
IMDG Class	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		-
IATA-DGR Class	1760	Corrosive liquid, n.o.s. (Ethanolamine, potassium hydroxide)	8	II		-

14. Transport information

PG* : Packing group

15. Regulatory information

HCS Classification : Toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined
United States inventory (TSCA 8b): Not determined.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Ethanolamine; Ethylene glycol monobutyl ether; BENZYL ALCOHOL; potassium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Ethanolamine: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Ethylene glycol monobutyl ether: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; BENZYL ALCOHOL: Immediate (acute) health hazard, Delayed (chronic) health hazard; potassium hydroxide: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 311: potassium hydroxide; Sodium hydroxide

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Ethylene glycol monobutyl ether	111-76-2	10 - 20
Supplier notification	Ethylene glycol monobutyl ether	111-76-2	10 - 20

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: POTASSIUM HYDROXIDE; BENZYL ALCOHOL; 2-BUTOXYETHANOL; ETHANOLAMINE

New York : The following components are listed: Potassium hydroxide

New Jersey : The following components are listed: POTASSIUM HYDROXIDE; CAUSTIC POTASH; 2-BUTOXY ETHANOL; BUTYL CELLOSOLVE; ETHANOLAMINE; ETHANOL, 2-AMINO-

Pennsylvania : The following components are listed: POTASSIUM HYDROXIDE (K(OH)); BENZENEMETHANOL; ETHANOL, 2-BUTOXY-; ETHANOL, 2-AMINO-

Canada inventory : Not determined.

International regulations

15. Regulatory information

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16. Other information

Label requirements : CORROSIVE. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	3
Flammability		1
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of printing : **8/13/2012.**
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16. Other information

Version : 0.02

Prepared by : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.