

FORMULA 512 M

Product number: 303004

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. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center/doctor. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store locked up. Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Keep out of the reach of children.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	% by weight
Naphtha (petroleum), heavy aromatic	64742-94-5	30 - <35
2-Butoxyethanol	111-76-2	10 - <15
Dodecylbenzene Sulfonic Acid, Potassium Salt	27177-77-1	5 - <10
Ethanolamine	141-43-5	1 - <5
Naphthalene	91-20-3	1 - <5
1,2,4-Trimethyl benzene	95-63-6	0.1 - <1
Cumene	98-82-8	0.1 - <1
Potassium hydroxide	1310-58-3	0.1 - <1

4. First-aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Notes to physician	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance, if not at hospital. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed.

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Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Do not breathe mist or vapor. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

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

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Wear appropriate personal protective equipment. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Do not breathe mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Do not mix with other chemicals. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Keep away from heat, sparks and open flame. Keep in an area equipped with sprinklers. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Cumene (CAS 98-82-8)	TWA	50 ppm
Ethanolamine (CAS 141-43-5)	STEL	6 ppm
	TWA	3 ppm
Naphthalene (CAS 91-20-3)	TWA	10 ppm
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3

Control parameters

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3
		50 ppm
Cumene (CAS 98-82-8)	PEL	245 mg/m3
		50 ppm
Ethanolamine (CAS 141-43-5)	PEL	6 mg/m3

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

Components	Type	Value
Naphthalene (CAS 91-20-3)	PEL	3 ppm 50 mg/m ³ 10 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Individual protection measures, such as personal protective equipment

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

Skin protection

Hand protection Wear protective gloves.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations When using, do not eat, drink or smoke. 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.

9. Physical and chemical properties

Appearance	clear
Form	Liquid.
Color	green
Odor	solvent
Odor threshold	Not available.
pH	13.5
Melting point/freezing point	32 °F (0 °C)
Boiling point	212 °F (100 °C)
Flash point	152.0 °F (66.7 °C) Pinsky-Martens Closed Cup
Evaporation rate	1 (water = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg @ 68F
Vapor density	4 approximately
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.

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Viscosity	< 20 mm ² /s
Specific gravity	0.98
VOC (Weight %)	52.68 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Do not mix with other chemicals. Reacts violently with strong acids.
Incompatible materials	Acids. Strong oxidizing agents. Oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Toxicological data

Product	Test Results
FORMULA 512 M (Mixture)	Acute Dermal LD50 Rabbit: > 5000 mg/kg /
	Acute Inhalation LC50 Rat: > 20 mg/l/4h /
	Acute Oral LD50 Rat: > 3000 mg/kg /

Information on likely routes of exposure

Eye contact	Causes serious eye damage.
Skin contact	Causes severe skin burns.
Ingestion	Causes digestive tract burns. May be fatal if swallowed and enters airways.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May be fatal if swallowed and enters airways. May cause irritation to the respiratory system.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Butoxyethanol (CAS 111-76-2)	3 Not classifiable as to carcinogenicity to humans.
Cumene (CAS 98-82-8)	2B Possibly carcinogenic to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.
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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Chronic effects	Prolonged inhalation may be harmful. May be harmful if absorbed through skin. 2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans. Prolonged exposure may cause chronic effects. Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

Toxicological information Occupational exposure to the substance or mixture may cause adverse effects.

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12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Cumene (CAS 98-82-8)	U055
Naphthalene (CAS 91-20-3)	U165

Waste from residues / unused products	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 retain 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. (Ethanolamine, Potassium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242
Ethanolamine	
Potassium hydroxide	

IATA

UN number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s. (Ethanolamine, Potassium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

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A3,A803

IMDG

UN number	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (Ethanolamine, Potassium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cumene (CAS 98-82-8)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Potassium hydroxide (CAS 1310-58-3)	Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA (Superfund) reportable quantity

Naphthalene: 100
Cumene: 5000
Potassium hydroxide: 1000

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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Naphthalene	91-20-3	1 - <5
1,2,4-Trimethyl benzene	95-63-6	0.1 - <1
Cumene	98-82-8	0.1 - <1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cumene (CAS 98-82-8)
Naphthalene (CAS 91-20-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

1,2,4-Trimethyl benzene (CAS 95-63-6)
2-Butoxyethanol (CAS 111-76-2)
Cumene (CAS 98-82-8)
Ethanolamine (CAS 141-43-5)
Naphthalene (CAS 91-20-3)
Potassium hydroxide (CAS 1310-58-3)

US. New Jersey Worker and Community Right-to-Know Act

1,2,4-Trimethyl benzene (CAS 95-63-6) 500 LBS
Cumene (CAS 98-82-8) 500 LBS
Naphthalene (CAS 91-20-3) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

1,2,4-Trimethyl benzene (CAS 95-63-6)
2-Butoxyethanol (CAS 111-76-2)
Cumene (CAS 98-82-8)
Ethanolamine (CAS 141-43-5)
Naphthalene (CAS 91-20-3)
Potassium hydroxide (CAS 1310-58-3)

US. Rhode Island RTK

1,2,4-Trimethyl benzene (CAS 95-63-6)
Cumene (CAS 98-82-8)
Naphthalene (CAS 91-20-3)
Potassium hydroxide (CAS 1310-58-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Cumene (CAS 98-82-8) Listed: April 6, 2010
Naphthalene (CAS 91-20-3) Listed: April 19, 2002

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International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date 01-07-2015

Revision date 04-16-2015

Version # 02

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates 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 in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.