

MATERIAL SAFETY DATA SHEET

Lonza

EMERGENCY TELEPHONE 800-424-9300 (Chemtrec)

Lonza Inc.90 Boroline Road Allendale NJ 07401
800-777-1875 (9am - 5pm) 309-697-7200 (After 5pm)

Health : 3
Flammability : 2
Reactivity : 0

95318 Bardac 208M

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MATERIAL Bardac 208M	DATE ISSUED 10/30/04 - Revised	DOT HAZARD CLASSIFICATION 8, PG II
CAS. NO. Mixture	SUPERCEDES 09/22/04	DOT SHIPPING NAME Disinfectants, Liquid, Corrosive, N.O.S.
FORMULA Mixture		DOT LABEL Corrosive IMO SHIPPING NAME Corrosive liquid, flammable, N.O.S. Marine Pollutant

CHEMICAL NAME (Active) mixture of N,N-Dialkyl-N,N-dimethylammonium Chloride and N-Alkyl-N,N-dimethyl-N-benzylammonium Chloride

***** I - INGREDIENTS *****

	APPROXIMATE	
	WEIGHT %	TWA/TLV
N,N-Dialkyl (C ₈₋₁₀)-N,N-dimethylammonium Chloride (CAS No. 68424-95-3)	48	None established
N-Alkyl (C ₁₂₋₁₆)-N,N-dimethyl-N-benzylammonium Chloride (CAS No. 68424-85-1)	32	None established
Ethanol (CAS No. 64-17-5)	10	1000 ppm (OSHA-PEL) 1000 ppm (ACGIH-TWA)
Water (CAS No. 7732-18-5)	10	None established

***** II - PHYSICAL AND CHEMICAL PROPERTIES *****

APPEARANCE Colorless to pale yellow liquid	pH 6.5 to 9.0 @ 10%
VISCOSITY <100 cps @ 25°C	ODOR Mild ethanol-like
BOILING POINT Not known	MELTING OR FREEZING POINT -20 °C
VAPOR DENSITY (Air=1) Not known	VAPOR PRESSURE (mm Hg) Not known
PERCENT VOLATILE (by weight) 20	SOLUBILITY IN WATER Soluble
EVAPORATION RATE (Butyl Acetate=1) Not known	SPECIFIC GRAVITY (Water=1) 0.91 @ 25°C

***** III - FIRE AND EXPLOSION INFORMATION *****

FLASH POINT 116°F	AUTO IGNITION TEMPERATURE Not known
LOWER EXPLOSION LIMIT (%) Not applicable	UPPER EXPLOSION LIMIT (%) Not applicable
EXTINGUISHING MEDIA FOAM	ALCOHOL FOAM X CO₂ X
	WATER X OTHER

SPECIAL FIRE FIGHTING PROCEDURES:

Must wear NIOSH approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Products of combustion are toxic. Heated solvent vapor can travel to an ignition source and flash back.

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INCOMPATIBILITY (MATERIALS TO AVOID)

WATER OTHER X Strong oxidizing or reducing agents.

***** VI - SPILL AND DISPOSAL INFORMATION *****

STEPS TO BE TAKEN IN CASE OF MATERIAL SPILL OR RELEASE

DANGER! Corrosive and flammable material. Remove all sources of ignition and ground all equipment before beginning cleanup. Wear appropriate protective equipment and respiratory protection where mists or vapors of unknown concentrations may be generated (self-contained breathing apparatus preferred).

Dike and contain spill with inert material (sand, earth, etc.) and transfer the liquid and solid separately to containers for recovery or disposal. Keep spill out of sewers and open bodies of water.

WASTE DISPOSAL METHODS

Dispose of in compliance with all Federal, state and local laws and regulations. Incineration is the preferred method.

CONTAINER DISPOSAL

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

***** VII - PERSONAL PROTECTION INFORMATION *****

ENGINEERING CONTROLS

In processes where mists or vapors may be generated, proper ventilation must be provided in accordance with good ventilation practices.

RESPIRATORY PROTECTION

In processes where mists or vapors may be generated, a NIOSH/MSHA jointly approved respirator is advised in the absence of proper environmental controls.

PROTECTIVE GLOVES

Rubber or neoprene, to prevent skin contact.

EYE PROTECTION

Wear chemical splash goggles where there is a potential for eye contact. Use safety glasses with side shields where there is no potential for eye contact.

OTHER PROTECTIVE EQUIPMENT

Eye wash; safety shower; protective clothing (long sleeves, coveralls or other, as appropriate), to prevent skin contact.

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***** VIII - STORAGE AND HANDLING *****

PRECAUTIONS FOR STORAGE AND HANDLING:

Store containers in compliance with the most recent NFPA Code (NFPA 30). Ground all containers prior to pouring. Take appropriate measures to avoid exposure to high vapor concentrations, which can occur when transferring material from container to container. Keep container tightly closed when not in use. Do not contaminate drinking water, food or feed by storage or disposal. Maximum storage temperature: 140°F.

Empty containers retain product residues and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind or expose such containers to heat or flame. They may explode and cause injury. Follow all MSDS precautions in handling empty containers.

***** IX - TOXICOLOGY & ECOTOXICITY INFORMATION *****

The toxicity and ecotoxicity information provided below is for this product, similar product(s) and/or components of this product.

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TOXICITY

ACUTE

For Bardac 208M:

- oral LD₅₀ (rat): 366 mg/kg

For Bardac 205M (50% Actives mixture - Dialkyl(C₈₋₁₀)dimethylammonium Chloride and Alkyl(C₁₂₋₁₆)dimethylbenzylammonium Chloride)

- dermal LD₅₀ (rabbit): 645 mg/kg
- skin irritation (rabbit): Severe irritant
- eye irritation (rabbit): Extreme irritant
- skin corrosivity(rabbit - DOT): Corrosive
- skin sensitization (guinea pig - Buehler test): Not a skin sensitizer

For the Dialkyl(C₈₋₁₀)dimethylammonium chloride:

- skin photosensitivity (guinea pig): Not a direct sensitizer or photosensitizer

GENOTOXICITY/MUTAGENICITY

For the Dialkyl(C₈₋₁₀)dimethylammonium chloride:

- Ames assay (Salmonella sp.): Not mutagenic with or without metabolic activation.
- HGPRT assay (in vitro - CHO cells): Not clastogenic with or without metabolic activation
- Micronucleus test (in vivo - rat): No evidence of chromosomal damage in the bone marrow of rats treated at a dosage of 600 mg/kg
- not teratogenic in rats treated with 10 to 50 mg/kg on days 6 to 15 gestation (50% active)

For Alkyldimethyl(C₁₂₋₁₆)benzylammonium chloride:

- unscheduled DNA synthesis (in vitro - rat hepatocytes): Not mutagenic with or without metabolic activation.
- HGPRT (in vitro - CHO cells): Not mutagenic with or without metabolic activation. (2 tests)

REPRODUCTIVE/DEVELOPMENTAL

For Alkyldimethyl(C₁₂₋₁₆)benzylammonium chloride:

- developmental (rat - oral): NOAEL - 10 mg/kg/day for both maternal and neonatal. No evidence of developmental toxicity effects was observed at exposure doses ranging from 10-100 mg/kg/day administered from day 6 through 18 of gestation. Clear signs of maternal toxicity were observed at the high-dose level of 100 mg/kg/day.

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***** IX - TOXICOLOGY & ECOTOXICITY INFORMATION (continued)*****

- developmental (rabbit - oral): NOAEL - 3 mg/kg/day for both maternal and neonatal. No evidence of developmental toxicity effects was observed at exposure doses ranging from 1 to 9 mg/kg/day administered from day 6 through 18 of gestation. Clear signs of maternal toxicity were observed at the high-dose level of 9 mg/kg/day.
- reproductive/developmental (rat - two generation feeding): NOAEL - 1000 ppm. Neonatal and maternal adverse effects were observed in animals dosed at 2000 ppm.

ECOTOXICITY AQUATIC

For Alkyldimethylbenzylammonium chloride:

- LC 50 (bluegill sunfish - 96 hour, static): 0.52 mg/l
- LC 50 (rainbow trout - 96 hour, static): 0.93 mg/l
- LC 50 (sheepshead minnow - 96 hour, static): 0.86 mg/l
- EC 50 (Daphnia magna - 48 hour, static): 0.058 mg/l

***** X - MISCELLANEOUS AND REGULATORY INFORMATION *****

FEDERAL REGULATIONS:

TOXIC SUBSTANCES CONTROL ACT (TSCA INVENTORY) STATUS:

The components in this product are all listed on the U.S. TSCA 8(b) Inventory.

TSCA Section 12(b) Export Notification

Components present in this product which, if exported, could require either annual or one-time reporting under this regulation are as follows:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
EXEMPT - U.S. EPA FIFRA Registered Product		

US EPA Regulation on Pesticides:

This product is an EPA FIFRA registered pesticide (EPA Registration No. 6836-67). This product can be used commercially only in the EPA registered application(s) noted on the product label.

US FDA Regulations on Food Contact:

This product is regulated under the following section(s) of the Code of Federal Regulations (CFR) when used in permitted food contact applications:
21 CFR 177.1010

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act of 1980 requires notification of the National Response Center (Telephone 800-424-8802) in the event of a release of quantities of the following hazardous materials contained in this product, if the release is equal to or greater than the Reportable Quantities (RQs) listed in 40 CFR 302.4: RQ is 500 lbs

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Methanol	67-56-1	0.5%

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***** X - MISCELLANEOUS AND REGULATORY INFORMATION (continued) *****
FEDERAL REGULATIONS (continued):

SARA Title III, Sections 302/304 (Superfund Amendments and Reauthorization act of 1986) - This act requires emergency planning, including agency notification, for possible release of the following components of this material, based upon the Threshold Planning Quantities (TPQs) and release Reportable Quantities (RQs) listed for the Components in 40 CFR 355:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None known		

SARA Title III Sections 311/312 - This act requires reporting under the Community Right-to-Know provisions due to the inclusion of the following components of this material in one or more of the five hazard categories listed in 40 CFR 370:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Hazard *) Categories</u>
N,N-dialkyl-N,N-dimethylammonium Chloride	68424-95-3	A
N-Alkyl-N,N-dimethyl-N-benzylammonium Chloride	68424-85-1	A
Ethanol	64-17-5	F

*) The five hazard categories are as follows: F=FIRE HAZARD; S= SUDDEN RELEASE OF PRESSURE; R=REACTIVE; A=IMMEDIATE (ACUTE) HEALTH HAZARD; C=DELAYED (CHRONIC) HEALTH HAZARD

SARA Title III Section 313 - This act requires submission of annual reports off the releases of the following components of this material if the threshold reporting quantities as listed in 40 CFR 372, are met or exceeded:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
None known		

STATE RIGHT-TO-KNOW REGULATIONS:

CALIFORNIA PROPOSITION 65 - Components present in this material which the State of California has found to cause cancer, birth defects or other reproductive harm are as follows:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Acetaldehyde	75-07-0	1 ppm
Benzene	71-43-2	100 ppm
Benzyl Chloride	100-44-7	100 ppm
N-Nitrosodimethylamine	62-75-9	500 ppb
Propylene Oxide	75-56-9	10 ppm
Toluene	108-88-3	100 ppm

MASSACHUSETTS Right-to-Know - The following components of this material are included in the Massachusetts Substance List and are present at or above reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Ethanol	64-17-5	10 %
Benzyl Chloride	100-44-7	100 ppm

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***** X - MISCELLANEOUS AND REGULATORY INFORMATION (continued) *****

MICHIGAN Critical Materials - The following components of this material are included in the Michigan Critical Materials List:

<u>Chemical Name</u>	<u>CAS Number</u>
None known	

STATE RIGHT-TO-KNOW REGULATIONS:

NEW JERSEY Right-to-Know - The following components of this material are included in the New Jersey Hazardous Substance List and are present at or above reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
N,N-dialkyl-N,N-dimethylammonium Chloride	68424-95-3	48%
N-Alkyl-N,N-dimethyl-N-benzylammonium Chloride	68424-85-1	32%
Ethanol	64-17-5	10%

PENNSYLVANIA Right-to-Know - The following components of this material are included in the Pennsylvania Hazardous Substance List and are present at or above reportable levels:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Typical Maximum Concentration</u>
Ethanol	64-17-5	10%