MATERIAL SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1. Identification
Product identifier

Product number 814363
Product name N-Alkyl-N,N-dimethyl-N-benzylammonium chloride for synthesis

Relevant identified uses of the substance or mixture and uses advised against
Identified uses Use restricted under TSCA to research and development or as analytical reagent. Uses regulated under FDA or FIFRA are not affected.
Chemical for synthesis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification
Acute toxicity, Category 4, Oral, H302
Skin corrosion, Category 1B, H314
Acute aquatic toxicity, Category 1, H400
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word
Danger

Hazard Statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.

Precautionary Statements
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards
None known.

SECTION 3. Composition/information on ingredients
Formula \((\text{C}_6\text{H}_5\text{CH}_2)(\text{CH}_3)_2\text{N}(\text{C}_{12\text{-}14}\text{Alkyl})^+\text{Cl}^-\)
CAS-No. 85409-22-9

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
Quaternary ammonium compounds, benzyl-C12-14-alkyldimethyl, chlorides (>= 90 % - <= 100 %)
85409-22-9

SECTION 4. First aid measures
Description of first-aid measures
Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

Eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
Irritation and corrosion. Risk of blindness!

Indication of any immediate medical attention and special treatment needed
No information available.
SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Water, Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible material. Vapors are heavier than air and may spread along floors.
Risk of dust explosion.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
Hydrogen chloride gas, nitrogen oxides

Advice for firefighters
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.
Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts.
Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling
Observe label precautions.

Conditions for safe storage, including any incompatibilities
Tightly closed. Dry.
Store at +15°C to +25°C (+59°F to +77°F).
SECTION 8. Exposure controls/personal protection

Exposure limit(s)
Contains no substances with occupational exposure limit values.

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

Eye/face protection
Tightly fitting safety goggles

Hand protection
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.

Other protective equipment:
protective clothing

Respiratory protection
required when dusts are generated.
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.

SECTION 9. Physical and chemical properties

Physical state  powder
Color  light yellow
Odor  aromatic
Odor Threshold  No information available.

pH  5 - 8
at  10 g/l
68 °F (20 °C)

Melting point  49 - 52 °C
Boiling point  No information available.
Flash point  > 212 °F (> 100 °C)
Method: c.c.
Evaporation rate: No information available.
Flammability (solid, gas): No information available.
Lower explosion limit: No information available.
Upper explosion limit: No information available.
Vapor pressure: No information available.
Relative vapor density: No information available.
Relative density: No information available.
Water solubility: ca. 250 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water: No information available.
Autoignition temperature: No information available.
Decomposition temperature: No information available.
Viscosity, dynamic: No information available.
Explosive properties: No information available.
Ignition temperature: > 482 °F (> 250 °C)
Dust
Bulk density: 350 kg/m³

SECTION 10. Stability and reactivity

Reactivity
Risk of dust explosion.
Forms explosive mixtures with air on intense heating.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions
Violent reactions possible with:
strong reducing agents, strong oxidizing agents, surfactants

Conditions to avoid
Strong heating.

Incompatible materials
no information available
Hazardous decomposition products
in the event of fire: See section 5.

SECTION  11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact, Ingestion

Acute oral toxicity
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation
of the esophagus and the stomach.

Absorption

Acute inhalation toxicity
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of
respiratory tract

Skin irritation
Causes burns.

Eye irritation
Causes serious eye damage.
Risk of blindness!

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC
No ingredient of this product present at levels greater than or
equal to 0.1% is identified as probable, possible or confirmed
human carcinogen by IARC.

OSHA
No ingredient of this product present at levels greater than or
equal to 0.1% is identified as a carcinogen or potential
carcinogen by OSHA.

NTP
No ingredient of this product present at levels greater than or
equal to 0.1% is identified as a known or anticipated carcinogen
by NTP.

ACGIH
No ingredient of this product present at levels greater than or
equal to 0.1% is identified as a carcinogen or potential
carcinogen by ACGIH.

Further information
Quantitative data on the toxicity of this product are not available.
Further data:
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity
No information available.

Persistence and degradability
No information available.

Bioaccumulative potential
No information available.

Mobility in soil
No information available.

Additional ecological information
We have no quantitative data concerning the ecological effects of this product.
Further information on ecology
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)
UN number UN 1759
Proper shipping name CORROSIVE SOLID, N.O.S. (BENZYLDIMETHYLTETRADECYLAMMONIUM CHLORIDE)
Class 8
Packing group II
Environmentally hazardous --

Air transport (IATA)
UN number UN 1759
Proper shipping name CORROSIVE SOLID, N.O.S. (BENZYLDIMETHYLTETRADECYLAMMONIUM CHLORIDE)
Class 8
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)
SECTION 15. Regulatory information

United States of America

OSHA Hazards
Corrosive to skin
Corrosive to eyes

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards
Acute Health Hazard

SARA 313
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Remarks
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know
Ingredients
Quaternary ammonium compounds, benzyl-C12-14-alkyldimethyl, chlorides
New Jersey Right To Know

Ingredients
Quaternary ammonium compounds, benzyl-C12-14-alkyldimethyl, chlorides

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status
TSCA: Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.
Ingredients
Quaternary ammonium compounds, benzyl-C12-14-alkyldimethyl, chlorides

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 08/22/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.