



Curene 442

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Curene 442
Synonyms: 4,4'-Methylene bis(2-chloroaniline)
Common Name: MOCA
SDS Number: Curene 442-F0179-US
Revision Date: 2/13/2019
Version: 5
CAS Number: 101-14-4
Chemical Family: Aromatic Diamine
Product Use: For industrial or professional use only. This material is used as a curing agent for the production of cast polyurethane elastomers.

Supplier Details: Anderson Development Company
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2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Health, Carcinogenicity, 1 B
Health, Germ cell mutagenicity, 2
Health, Acute toxicity, 4 Oral

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

H350 - May cause cancer
H341 - Suspected of causing genetic defects
H302 - Harmful if swallowed

GHS Precautionary Statements:

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+312 - IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P308+313 - IF exposed or concerned: Get medical advice/attention.
P330 - Rinse mouth.
P405 - Store locked up.
P501 - Dispose of container in accordance with federal/local/state regulations.

Ingredients:

Cas#	%	Chemical Name
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101-14-4	>90%	4,4'-Methylene bis(2-chloroaniline) (MOCA)
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-The exact percentage of the components has been withheld as a Trade Secret.

FIRST AID MEASURES

Inhalation: Move to an area free from the risk of further exposure. If not breathing, or breathing is difficult, obtain medical attention.

Skin Contact: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash thoroughly with soap and water. Get medical attention if irritation or rash develops on affected area. Wash clothing before reuse.

Eye Contact: Rinse with water immediately for 15 minutes. Remove contact lenses if present. If irritation occurs, seek medical attention.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most Important Symptoms/Effects: See Section 11

FIRE FIGHTING MEASURES**Extinguishing media:**

Suitable media includes carbon dioxide, dry chemical and foam.

Inappropriate media: water spray or water discharge.

Special hazards arising from the substance or mixture:

Toxic and/or irritating fumes can be produced during burning of this material. Decomposition products may be hazardous (see section 10 for details on decomposition products).

Advice for firefighters:

Firefighters should wear self-contained breathing apparatus and full protective clothing. Downwind personnel should be evacuated. Do not reseal contaminated containers as pressure buildup may rupture them.

ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment, and emergency procedures:**

Evacuate personnel. Wear suitable PPE as described in section 8.

Environmental precautions:

Prevent migration into groundwater, sewers, or streams. Land spills may require excavation of contaminated soil. Material should not be released into the environment.

Methods and materials for containment and cleaning up:

Recover the spilled liquid with an inactive absorbent (e.g. dry sand) and put into chemical waste container. Prevent liquid from entering sewers, watercourses, etc.

For solid: Sweep and collect the solid in a container and store until disposal.

Handling Precautions:	Precautions for safe handling Use in a well ventilated area, using good industrial hygiene practices. Avoid contact with eyes, skin, and clothing, and wear proper PPE (see section 8).
Storage Requirements:	Conditions for safe storage, including anything that is incompatible Store material at ambient temperature and pressure. Keep away from sources of direct heat and moisture. Keep container tightly closed when not in use. Containers can retain product residue after being emptied. Always obey hazards warnings and handle empty containers as though they were full. Material is stable under normal conditions.

Engineering Controls:	Provide local exhaust ventilation to keep airborne concentrations below the recommended occupational exposure limits.
Personal Protective Equipment:	HMIS PP, C Safety Glasses, Gloves, Apron 4,4'-Methylene bis(2-chloroaniline) (MOCA) (101-14-4) [100%] Personal protective equipment: Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatril (KCL 740 / Aldrich Z677272, Size M) Splash contact data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. Eye protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Chemical Name	Limit Type	Value	Comments
4,4'-Methylene bis(2-chloroaniline)	PEL-TWA	none	OSHA Guideline
4,4'-Methylene bis(2-chloroaniline)	TLV-TWA	0.01 ppm	ACGIH Guideline
4,4'-Methylene bis(2-chloroaniline)	REL-TWA	0.003 mg/m ³	NIOSH Guideline

*skin notation/BEI

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow to Yellowish brown	Odor:	Slight aromatic
Physical State:	Solid	Molecular Formula:	C ₁₃ H ₁₂ Cl ₂ N ₂
Odor Threshold:	Not determined	Solubility:	0.48mg/L (water)
Spec Grav./Density:	1.44 g/cm ³ (solid) / 1.26 g/cm ³ (110°C)	Freezing/Melting Pt.:	100-110°C (212-230°F)
Viscosity:	10cP (120°C)	Flash Point:	Not applicable
Boiling Point:	Not applicable	Octanol:	Not determined
Flammability:	Not applicable	Vapor Density:	9.21 (calculated)
Partition Coefficient:	log Pow = 3.91 (measured)	Auto-Ignition Temp:	Not determined
Vapor Pressure:	0.000381 hPa (25°C)	UFL/LFL:	Not applicable
pH:	weak alkalinity		
Evap. Rate:	Not applicable		
Decomp Temp:	200°C		

10 STABILITY AND REACTIVITY

Reactivity:	Reacts with mineral acid to form a salt.
Chemical Stability:	Stable under normal storage conditions.
Conditions to Avoid:	Exposure to temperatures above 200°C may liberate 2-Chloroaniline. Avoid contact with incompatible materials.
Materials to Avoid:	Oxidizing agents, reducing agents and strong bases.
Hazardous Decomposition:	May liberate hydrogen chloride, phosgene, carbon monoxide, and carbon dioxide and nitrogen oxides.
Hazardous Polymerization:	Hazardous Polymerization will not occur.

11 TOXICOLOGICAL INFORMATION

Routes of Exposure and Health Effects/Symptoms:

Inhalation: Harmful in inhaled; may cause respiratory irritation.

Skin contact: May cause skin irritation. A component may be absorbed thru the skin in harmful amounts.

Eye contact: May cause eye irritation.

Ingestion: Harmful if swallowed. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Immediate and Delayed Health Effects: Irritation, Exposure may cause damage to organs (lungs, liver, kidney, hematologic system).

Symptoms: 4,4'-Methylene bis(2-chloroaniline) (MOCA)- (101-14-4)
hematuria (blood in the urine), cyanosis, nausea, methemoglobinemia, kidney irritation

LD50s and LC50s: 4,4'-Methylene bis(2-chloroaniline) (MOCA)- (101-14-4)

LD50 (oral): 2,000 mg/kg (rat)

LD50 (Dermal): >2,000mg/kg (rabbit)

Carcinogenicity: 4,4'-Methylene bis(2-chloroaniline) (MOCA)- (101-14-4)

NTP: Reasonably anticipated to be a human carcinogen

IARC: Group 1

OSHA: None

Germ cell mutagenicity: 4,4'-Methylene bis(2-chloroaniline) (MOCA)- (101-14-4)

Laboratory experiments have shown mutagenic effects.

No data on product available.

4,4'-Methylene bis(2-chloroaniline) (MOCA) (101-14-4):

Endpoint/Species/Duration/Result

LC50/Fish/96 hours/0.606mg/L

EC50/Daphnia/48 hours/0.92mg/L

EC50/Algae/72 hours/>0.85mg/L

Persistence and degradability: Does not rapidly biodegrade.

Bioaccumulative potential: Not data available on product.

Mobility in soil: No data available on product.

Follow all applicable local, state, and federal disposal regulations.

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

DOT (US)

RQ, UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (4,4'-Methylene bis(2-chloroaniline), 9, III

Reportable Quantity (RQ): 10 lbs

IMDG

UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (4,4'-Methylene bis(2-chloroaniline), 9, III

Marine Pollutant

IATA

UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (4,4'-Methylene bis(2-chloroaniline), 9, III

Marine Pollutant

COMPONENT / (CAS/PERC) / CODES

*4,4'-Methylene bis(2-chloroaniline) (MOCA) (101144 100%) HAP, MASS, NJHS, NRC, OSHAWAC, PA, TOXICRCRA, TXAIR, TXHWL

REGULATORY KEY DESCRIPTIONS

HAP = Hazardous Air Pollutants

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right-to-Know Hazardous Substances

NRC = Nationally Recognized Carcinogens

OSHAWAC = OSHA Workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)

TXAIR = TX Air Contaminants with Health Effects Screening Level

TXHWL = TX Hazardous Waste List

4,4'-Methylene bis(2-chloroaniline)

Reportable Quantity: 10 pounds

California Proposition 65: known to cause cancer by the state of California

SARA TITLE III: Section 313

Country / Inventory / Status:

United States / TSCA / On the inventory

Canada / DSL / On the inventory

Abbreviation Key:**PEL** - permissible exposure limit**TWA** - time weighted average**TLV** - threshold limit value**STEL** - short term exposure limit**IDLH** - immediately dangerous to life and health**OSHA** - Occupational Safety and Health Administration**ACGIH** - American Conference of Governmental Industrial Hygienists**NIOSH** - National Institute for Occupational Safety and Health**N/A** - Not applicable**LC₅₀** - lethal concentration to 50% of test subjects**LD₅₀** - lethal dose to 50% of test subjects**STOT-SE** - Specific target organ toxicity (single exposure)**STOT-RE** - Specific target organ toxicity (repeated exposure)**EC₅₀** - effective concentration that causes 50% of response from test subjects**ErC₅₀** - EC₅₀ in terms of growth rate reduction**CERCLA** - Comprehensive Environmental Response, Compensation, and Liability Act**SARA** - Superfund Amendments and Reauthorization Act**TSCA** - Toxic Substances Control Act**DSL** - Domestic Substances List**NDSL** - Non-Domestic Substances List

This SDS complies with 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD, USA) and GHS. Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, Anderson Development Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Anderson Development Company be responsible for damages of any nature whatsoever resulting from the use of, misuse or reliance upon information. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to information or the product to which information refers. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure its activities comply with federal, state or provincial and local laws and regulations.