Safety Data Sheet

According to Regulation (EC) No 1907/2006

4,4'-methylenebis[2-chloroaniline]

Version 1.0

Issue date:28/01/2019

Revision date: 28/01/2019 **SDS Record Number: CSSS-TCO-010-110552**

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name:	4,4'-methylenebis[2-chloroaniline]
Additional identification:	Benzenamine,4,4'-methylenebis[2-chloro-4-[(4-amino-3-chlorophenyl)methyl]-2-chloroaniline MOCA
Identification of the product:	CAS#101-14-4; EC#202-918-9
Index Number:	612-078-00-9
REACH registration No.:	01-2119488993-16-0003

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

Storage and forwarding. Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharging) at dedicated facilities (industrial setting). Transfer of substance into small containers (dedicated filling line, incl weighing), industrial setting. Quality control. Manufacture of pre-polymer.

1.2.2 Uses advised against:

Not available

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative):	Qichen Polyurethane Co.,Ltd
Supplier(Manufacturer):	Qichen Polyurethane Co.,Ltd
Address:	Xinwu Road，Xiaoying Subdistrict , High-tech Zone ,Binzhou city,Shandong Province,China
Contact person(E-mail):	lucky@puqichen.com
Telephone:	+86-543-3282834
Fax:	+86-543-3282834

1.4 Emergency telephone Number:

+86-543-3282834

Available outside office hours?	YES		NO	X

Section 2 Hazards Identification

2.1 Classification of the substance/mixture:

2.1.1 Classification:

The substance is classified as following according to REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard codes
Acute Tox. 4	H302
Carc. 1B	H350
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

For full text of H- phrases: see section 2.2.

2.2 label elements:

Hazard Pictograms:

Signal Word(S): Danger

Hazard Statement:

H302: Harmful if swallowed

H350: May cause cancer

H410: Very toxic to aquatic life with long lasting effects

Precautionary statement:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P264: Wash hand thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P273: Avoid release to the environment.

P281: Use personal protective equipment as required.

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P308 + P313: IF exposed or concerned: Get medical advice/attention.

P330: Rinse mouth.

P391: Collect spillage.

P405: Store locked up.

P501: Dispose of contents/container in according with local regulation.

2.3 Other hazards:

Not available.

Section 3 Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
4,4'-methylenebis[2-chloroaniline]	01-2119488993-16-0003	101-14-4	202-918-9	>99%

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

4.1.2 In case of skin contact:

Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. Get immediate medical attention.

4.1.3 In case of eyes contact:

Immediately rinse eyes with running water for 15 minutes. Get immediate medical attention.

4.1.4 In case of ingestion:

If swallowed, dilute with water. DO NOT INDUCE VOMITING. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed:

Harmful if swallowed. May cause cancer.

4.3 Indication of any immediate medical attention and special treatment needed:

If skin irritation or rash occurs, get medical advice/attention.

Section 5 Fire-Fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Use water fog, foam, dry chemical or CO2 as extinguishing media.

Unsuitable extinguishing media: Water stream.

5.2 Special hazards arising from the substance or mixture: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. If polymerisation takes place in a closed container, there is a possibility of a violent rupture of the container. Personal Precautions Keep unnecessary people away; isolate area and deny unnecessary entry. Large spills: Evacuate area. Only trained and properly protected personnel should be involved in cleanup operations.

5.3 Special fire fighting methods and special protective actions 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.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel: Take up with an absorbent substance such as sand, clay, then place in a container for chemical waste. Material is flammable eliminate all ignition sources. Flush trace residues with water. Do not allow residues to enter waterways.

6.1.2 For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

6.2 Environmental Precautions: Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods for Containment and Cleaning up: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, and then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

6.4 Reference to other sections: See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

6.5 Additional information: Not applicable.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures: Avoid high temperatures (at or near flash point), open flame, sparks and direct sunlight. Free radical initiators. Do not blanket or purge with an inert gas to avoid depleting the oxygen concentration.

7.1.2 Advice on general occupational hygiene: Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities: Use leak-proof equipment with exhaust for filling, refilling or transfer. Do not leave containers open. Avoid splashing. Fill into labelled container only. Use acid resistant utensils. Avoid skin and eye contact. Do not breathe in vapor or aerosols. Unintended, spontaneous polymerization can occur by overheating (especially local

overheating), photo-initiation (UV light), contamination, corrosion (Fe), stabilizer depletion and stabilizer deactivation (via oxygen depletion). Thawing of frozen product with tempered water between 20℃and 35℃only.

7.3 Specific end use(s): Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

8.1.1 Occupational exposure limits:

Substance			Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period		
	EINECS No.	CAS No.	ppm	mg/ m3	ppm	mg/ m3	Notes
4,4'Methylenebis-(2-chloroaniline)	202-918-9	101-14-4	-	0.005	-	-	Sk, C2

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values:

PNEC aqua (freshwater) :95 ng/L
PNEC aqua (marine water): 9.5 ng/L
PNEC aqua (intermittent releases): 6.06 µg/L
PNEC STP:1 mg/L
PNEC sediment (freshwater): 0.0355 mg/kg sediment dw
PNEC sediment (marine water): 0.00355 mg/kg sediment dw
PNEC soil:0.00704 mg/kg soil dw
PNEC oral:0.067 mg/kg food
Workers - Hazard via inhalation route
Systemic effects-Long term exposure
DMEL (Derived Minimum Effect Level): 0.000776 mg/m³
Workers - Hazard via dermal route
Systemic effects-Long term exposure
DMEL (Derived Minimum Effect Level): 0.00445 mg/kg bw/day
General Population - Hazard via inhalation route
Systemic effects-Long term exposure
DMEL (Derived Minimum Effect Level): 0.000307 mg/m³
General Population - Hazard via dermal route
Systemic effects-Long term exposure
DMEL (Derived Minimum Effect Level): 0.00445 mg/kg bw/day
General Population - Hazard via oral route
Systemic effects-Long term exposure
DMEL (Derived Minimum Effect Level): 0.000111 mg/kg bw/day

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection: Use chemical goggles. Wear a face-shield which allows use of chemical goggles,or wear a full-face respirator, to protect face and eyes when there is any likelihood of splashes. Eye wash fountain should be located in immediate work area. If exposure causes eye discomfort, use a full-face respirator.

Hand protection:	Type of gloves recommended - Butyl rubber. Minimum breakthrough time / gloves: 480 min. Minimum thickness / gloves 0.5 mm.
Body protection:	Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full body-suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.
Respiratory protection:	When respiratory protection is required for certain operations, use an approved air-purifying respirator.
Thermal hazards:	Wear suitable protective clothing to prevent heat.
8.2.3 Environmental exposure controls:	Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance:	Solid
Colour:	Light Yellow
Odour:	Amine odor
Odour threshold:	Not available
pH:	Not available
Melting point/range (°C):	101.3 °C
Boiling point/range (°C):	>370 °C
Flash point (°C):	Not available
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Not highly flammable
Ignition temperature (°C):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20°C):	< 0.00147 Pa
Vapour density:	Not available
Density:	1440 kg/m³
Bulk density (kg/m³):	Not available
Water solubility (g/l):	Slightly soluble
n-Octanol/Water (log Po/w):	2.5
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not available
Explosive properties:	Non explosive
Oxidising properties:	No oxidising properties
Molecular Formula:	$C_{13}H_{12}Cl_2N_2$
Molecular Weight:	267.15

9.2. Other information:

Fat solubility(solvent– oil to be specified) etc:	Not available
Surface tension:	73.3 mN/m
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific gravity:	Not available

Section 10 Stability and reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	Stable at room temperature in closed containers under normal storage and handling conditions.
10.3 Possibility of hazardous reactions:	Reacts violently in contact with acids, amines, driers, polymerisation accelerators and easily oxidized materials. Polymerisation can occur. Vapours may form explosive mixture with air.
10.4 Conditions to avoid:	Incompatible materials. Avoid heat, ignition sources, and light, freezing temperatures, inhibitor loss and initiators. Do not store in excess of 6 months with less than 10 % headspace above liquid.
10.5 Incompatible materials:	Strong oxidizers, alkalies, aldehydes, ethers and amines.
10.6 Hazardous decomposition products:	Carbon monoxide, carbon dioxide.

Section 11 Toxicological information

11.1 Toxicokinetics, metabolism and distribution:

Non-human toxikological data:	Not available

11.2 Information on toxicological effects:

Acute toxicity:	
LD50(Oral, Rat):	2000 mg/kg bw
LD50(Dermal, Rat):	> 2000 mg/kg bw
LC50(Inhalation, Rat):	Not available
Skin corrosion/Irritation:	Not classified
Serious eye damage/irritation:	Not classified
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	May cause cancer.
Reproductive toxicity:	Not classified
STOT- single exposure:	Not classified
STOT-repeated exposure:	Not classified
Aspiration hazard:	Not classified

Section 12 Ecological information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	0.606 mg/L	96h	Fish	OECD 203	N/A	N/A
EC50	0.916 mg/L	48h	Daphnia	OECD 202	N/A	N/A
EC50	> 1.89 mg/L	72h	Algae	OECD 201	N/A	N/A

Persistence and degradability: Not readily biodegradable.

Bioaccumulative potential: No indication for a potential for bioaccumulation.

Mobility in soil: log Koc: 3.56

Results of PBT&vPvB assessment: The substance is not PBT / vPvB.

Other adverse effects: Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods: The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

13.2 Product / Packaging disposal: If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

Section 14 Transport information

	Land transport(ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	3077	3077	3077
UN Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4,4'-methylenebis[2-chloroaniline])	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4,4'-methylenebis[2-chloroaniline])	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4,4'-methylenebis[2-chloroaniline])
Transport hazard Class	9	9	9
Packaging group	III	III	III
Environmental hazards	Environmental hazards substance	Environmental hazards substance	Environmental hazards substance
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	IBC 08	IBC 08	IBC 08

Section 15 Regulation information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Relevant information regarding authorization: Entry Nr in Annex XIV: 27

Relevant information regarding restriction: Not applicable.

Substance of very high concern (SVHC) and included in the candidate list for authorization: Listed

Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations: Not applicable

Chemical Safety Assessment has been carried out? YES [X] NO [ ]

Section 16 Other information

16.1 Indication of changes:

16.2 Training instructions:

Not applicable.

16.3 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.4 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.