Safety Data Sheet

According to Regulation (EC) No 1907/2006, Annex II,

Amended by COMMISSION REGULATION (EU) 2020/878,

According to REGULATION (EC) No 1272/2008

4,4'-methylenebis[2-chloroaniline]

Version 1.0

Issue date: 01-07-2021

Revision date: 01-07-2021 **CIRS SDS Record Number: CSSS-TCO-010-144895**

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]
	Nanoform is NOT covered by this SDS.
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-**********-**-**03

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

1.2.1 Identified uses:

Curing agent/chain extender in cast polyurethane elastomer production.

1.2.2 Uses advised against:

Not available.

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative):	REACHLaw Ltd
Supplier(Manufacturer):	JIANGSU XIANGYUAN CHEMICAL CO., LTD.
Address:	HUANGHAI FIFTH ROAD YANGKOU CHEMICAL INDUSTRIAL PARK, RUDONG
	CITY, JIANGSU PROVINCE, P. R. CHINA
Contact person(E-mail):	janeluopu@gmail.com
Telephone:	+86-512-6753-6550
Fax:	+86-512-67545159

1.4 Emergency telephone Number:

+86-512-6753-6550 (Only available during office hours (9:00a.m.-17:30p.m.)

Available outside office hours? YES [ ] NO [X]

Section 2 Hazards Identification

2.1 Classification of the substance or mixture:

2.1.1 Classification of the substance:

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

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
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 pictogram(s):

Signal word: Danger

Hazard statement(s):

H302: Harmful if swallowed.
H350: May cause cancer.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

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.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312: IF SWALLOWED: Call a POISON CENTER/doctor 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 accordance with local/regional/national/international regulations.

Supplemental Hazard information (EU) Not applicable.

2.3 Other hazards:

The substance is not PBT / vPvB.

The substance is not identified as having endocrine disrupting properties.

Section 3 Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No./ Index No.	Concentration	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE)
4,4'-methylenebis[2-chloroaniline]	01-**********-**-**03	101-14-4	202-918-9/ 612-078-00-9	>99%	N/A

Note: 4,4'-methylenebis[2-chloroaniline] is a substance of very high concern (SVHC) and included in the candidate list for authorisation.

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 Firefighting 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 Advice for firefighters:	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 and material 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 8 for information on personal protection equipment. See Section 13 for information on disposal.

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°C and 35°C 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: European Union: Occupational Exposure Limit Value (8-hour reference period): 0.01mg/m^3

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

8.1.3 DNEL/DMEL and PNEC-Values:

Workers - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=0.001 mg/m³
Workers - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=0.004 mg/kg bw/day
General Population - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=0 mg/m³
General Population - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=0.004 mg/kg bw/day
General Population - Hazard via oral route	Systemic effects-Long term exposure	DNEL=0 mg/kg bw/day
Hazard for aquatic organisms	Freshwater	PNEC=95 mg/L
Hazard for aquatic organisms	Marine water	PNEC=9.5 mg/L
Hazard for aquatic organisms	STP	PNEC=1 mg/L
Hazard for aquatic organisms	Sediment (freshwater)	PNEC=0.035 mg/kg sediment dw
Hazard for aquatic organisms	Sediment (marine water)	PNEC=0.004 mg/kg sediment dw
Hazard for terrestrial organisms	Soil	PNEC=0.007 mg/kg soil dw
Hazard for predators	Secondary poisoning	PNEC=0.067 g/kg food

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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.

Skin protection

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 explosive limits:	Not available
Vapour pressure (20°C):	< 0.00147 Pa
Vapour density:	Not available
Relative Density:	1440 kg/m³ (20 °C)
Bulk density (kg/m³):	Not available
Water solubility (g/l):	0.014 g/L (20 °C)
n-Octanol/Water (log Po/w):	2.5 (25 °C)
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 (20 °C)
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	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 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

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

11.2 Information on other hazards

Endocrine disrupting properties	The substance is not identified as having endocrine disrupting properties.
Other information	Not applicable

Section 12 Ecological information

12.1 Toxicity:

Acute (short-term) toxicity:

LC50(96h, Fish):	0.606 mg/L
EC50(48h, Crustacea):	0.916 mg/L
EC50(72h, Algae/aquatic plants):	Not available

Chronic (long-term) toxicity:

NOEC(Fish):	Not available
NOEC(Crustacea):	0.009 mg/L
EC50(Algae/aquatic plants):	Not available
12.2 Persistence and degradability:	Under test conditions no biodegradation observed
12.3 Bioaccumulative potential:	BCF: 20.73 L/kg
12.4 Mobility in soil:	log Koc: 3.56
12.5 Results of PBT and vPvB assessment:	The substance is not PBT / vPvB.
12.6 Endocrine disrupting properties:	The substance is not identified as having endocrine disrupting properties.
12.7 Other adverse effects:	Not available.
12.8 Additional information	Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods: Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must

not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

Section 14 Transport information

	Land transport (ADR/RID)	Inland waterways (ADN)	Sea transport (IMDG)	Air transport (ICAO/IATA)
14. 1 UN number or ID number	UN3077	UN3077	UN3077	UN3077
14.2 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])	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(4,4'-methylenebis[2-chloroaniline])
14.3 Transport hazard Class(es)	9	9	9	9
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes	Yes	Yes	Yes
14.6 Special precautions for user	See section 2.2	See section 2.2	See section 2.2	See section 2.2
14.7 Maritime transport in bulk according to IMO instruments	IBC08	IBC08	IBC08	IBC08

Section 15 Regulatory 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.
Dangerous substance subject to the Seveso-III-Directive (2012/18/EU):
Entry Nr. 23 in powder form, Upper-tier requirements 0,01

Other National regulations: Not applicable

15.2 Chemical safety assessment YES [X] NO [ ]

Section 16 Other information

16.1 Indication of changes:

Version 1.0 Amended by (EU) 2020/878

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation for rail International transportation of Dangerous goods

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: Code international maritime dangerous goods code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.

NOEC: No Observed Effect Concentration

DNEL: derived no-effect level

PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data

ECHA Registered substances data

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008		Classification procedure
Acute Tox. 4	H302	On basis of test data
Carc. 1B	H350	On basis of test data
Aquatic Acute 1	H400	On basis of test data
Aquatic Chronic 1	H410	On basis of test data

16.5 Relevant H-statements (number and full text):

H302: Harmful if swallowed.

H350: May cause cancer.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

16.6 Training instructions:

Not applicable.

16.7 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.

16.8 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.

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