**GENERIC SAFETY DATA SHEET**

**SDS INSTRUCTIONS**

The SDS is for POLYURETHANE ELASTOMERS **MADE USING MOCA** (4,4’ methylene bis (2-chloroaniline: CAS # 104-14-4). The SDS contains most of the information you need. You need to edit this to match your product(s). Items in brackets [] indicate that information should be added. At a minimum, in order to complete the MSDS you must do the following:

 Section 1: Chemical Product / Company Identification must be completed in full

 Section 2: Hazard Identification - Emergency Overview must be altered to correspond with your specific material. The sentence that reads ”These fumes could contain traces of TDI, MDI, other isocyanates, and/or curatives.” needs to be changed to reflect your specific material. Replace TDI, MDI, other isocyanates, and/or curatives to reflect your specific raw materials. Note that there is a reference to mercury compounds that may or may not apply to your product

 Section 3: If the concentration of residual free MOCA in the product (article) is over 0.1% you must change the percentage in the table to reflect this. Refer to the REACH guidance on page 2 if the parts will be exported to an EU member country.

 Section 8: Exposure Controls, Personal Protection. Edit as needed to reflect your products.

 Section 10.6: Stability and Reactivity - Hazardous Decomposition or By-products must be altered to correspond with your specific material. The sentence that reads ”Decomposition through burning produces fumes consisting of organic particulate, gaseous hydrocarbons, carbon dioxide, carbon monoxide and may contain traces of toluene diisocyanate (TDI) or diphenylmethane diisocyanate (MDI), other isocyanates, curatives, hydrogen cyanide, acrolein and oxides of nitrogen.”, needs to be changed to reflect your specific material. Replace “toluene diisocyanate (TDI) or diphenylmethane diisocyanate (MDI), other isocyanates, curatives, hydrogen cyanide, acrolein and oxides of nitrogen” to reflect by products of your specific raw materials.

 Section 13: Disposal Considerations. Change this section if your product has the potential to be a hazardous waste.

 Section 15: Regulatory Information: This section should be carefully examined and filled in to note applicable federal, state, and international regulations. For example, polyurethane products with mercury content could be subject to some of these regulatory requirements.

 If the concentration of residual free MOCA in the product (article) is over 0.1% you must change Section 15 “international regulations” to reflect that the REACH “Communication” regulations apply. Refer to the REACH guidance on page 2..

**GUIDANCE FOR THE APPLICATION OF EUROPEAN REACH REGULATIONS:**

Since MOCA is identified as an SVHC, the following apply for parts (articles) being exported to the EU:

1) COMMUNICATION: The suppliers of articles containing MOCA in a concentration > 0.1% (w/w) have to provide “relevant safety information about this substance available to them to the recipients of these articles”. The presence of MOCA in parts need to be communicated down the supply chain if the concentration is above 0.1%.

2) NOTIFICATION: MOCA in an article requires Notification to EChA (European Chemical Agency) when **both** the following are true:

 • MOCA is present in an article in totals of 1 metric ton per year or more; **and**

 • MOCA is present in the article at a concentration > 0.1% w/w.

3) AUTHORIZATION: The fact that MOCA is on Annex XIV and therefore the use of it will be subject to Authorization does not have any effect on non-EU producers wanting to export articles to the EU.

The EChA website has excellent guidance documents and Q&A’s available to help those needing more information.

Disclaimer: This sample safety data sheet is provided for informational purposes only and should not be relied on as legal advice. Nothing herein constitutes the establishment of an attorney-client relationship between you and any attorney involved in drafting of material included this sample safety data sheet. The sample safety data sheet cannot and does not address the unique facts and circumstances of your specific situation and you should tailor the sample safety data sheet for your particular material formulation and application. If you have any questions on the use of the sample safety data sheet you should contact an industrial hygienist and/or legal counsel.

# Safety Data Sheet

## 1. Identification

* 1. Product identifier

[Product Name]

* 1. Relevant uses and uses advised against

[Example: For industrial or professional use only. ]

* 1. Details of the supplier of the safety data sheet
	[Company]

[Address]

Further Information: [email info]

* 1. Emergency contact information

Call []

## 2. Hazard(s) Identification

2.1 Classification of the substance or mixture

 While this material is not considered hazardous according to the OSHA Hazard Communication Standard (29CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available.

2.2 Label elements

 Hazard statements and symbols/Precautionary statements: None

2.3 Other hazards

 Emergency Overview

**Acute:** Fumes from hot work on or near polyurethane products can be irritating and lead to coughing. These fumes could contain traces of TDI, MDI, other isocyanates, and/or MBOCA. Skin or airborne exposure to isocyanates may produce an asthma-like lung sensitization, with shortness of breath, wheezing or cough, which may occur after re-exposure to very low levels. Skin contact with some polyurethane products may result in skin sensitization or an asthma-like lung sensitization. **Chronic:** Animal studies indicate that chronic inhalation or overexposure of dusts may cause inflammation of the lungs, fibrosis, and airway destruction.

**Severe Immediate Hazards**

Dusts from grinding operations may aggravate existing lung disorders when proper protection is not used.

**OSHA Regulatory Status**

POLYURETHANE ELASTOMERS ARE FULLY REACTED POLYMERS FORMING ARTICLES WHICH ARE NOT CONSIDERED HAZARDOUS UNDER OSHA’s CRITERIA 29 CFR 1910.1200. HOWEVER, HAZARDOUS DUSTS, VAPORS, GASES, OR FUMES MAY BE RELEASED BY MECHANICAL OR THERMAL PROCESSING, OR BY THERMAL DECOMPOSITION

## 3. Composition/Information on ingredients

|  |  |  |  |
| --- | --- | --- | --- |
| Component | Synonyms | CAS# | Concentration (wt%) |
| Cast polyurethane |  | n/a | >99.9% |
| 4,4’ methylene bis (2-chloroaniline) | MBOCA or MOCA | 104-14-4 | <0.1% |

## 4. First aid measures

4.1 Description of the first aid measures

|  |  |
| --- | --- |
| Route of Exposure | Instructions |
| Inhalation | Move to an area free from the risk of further exposure. If not breathing, or breathing is difficult, obtain medical attention. |
| Eye Contact | If dust from grinding causes irritation, rinse with water immediately for 5 minutes. Seek medical attention if irritation persists. |
| Skin Contact | Wash exposed skin with soap and water. |
| Ingestion | Not a route of exposure. |

4.2 Most important symptoms and effects, both acute and delayed

 Acute: None

 Delayed: Sensitizing effects possible from dusts/fumes

4.3 Indication of any immediate medical attention and special treatment needed

 No antidotes known

## 5. Fire Fighting Measures

5.1 Extinguishing media

 Suitable media includes carbon dioxide, dry chemical, foam, or water spray.

5.2 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).

5.3 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.

## 6. Accidental Release Measures

6.1 Personal precautions, protective equipment, and emergency procedures

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

6.2 Environmental precautions

[add any statements about material (e.g. mercury catalyst) that could leach out in end use]

6.3 Methods and materials for containment and cleaning up

Pick up and handle as any other solid material.

## 7. Handling and Storage

7.1 Precautions for safe handling

None in normal use.

7.2 Conditions for safe storage, including anything that is incompatible

Store material at ambient temperature and pressure. Keep away from sources of flame, sparks, or other ignition sources. Material is stable under normal conditions.

7.3 Specific end use(s)

 [enter uses]

## 8. Exposure Controls/Personal Protection

8.1 Control parameters

**Permissible Exposure Limits (PELS TLVs BEIs)**

There are no applicable exposure limits for cured polyurethane materials. There are limits for TDI and MDI which may be released under some heat processing activities.

The current OSHA Permissible Exposure Limit for both TDI and MDI is 0.02 ppm (Ceiling). A ceiling limit is not to be exceeded.

The current American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV)for TDI is 0.005 ppm for an 8 hour TWA, with a 15 minute Short Term Exposure Limit (STEL) of 0.02 ppm. TDI is also indicated as a “Sensitizer” by ACGIH. The 8 hour TLV for MDI is 0.005 PPM TWA. The TLV for TDI is under the 2006 ACGIH notice of intended changes. The proposed change is to lower the TLV for TDI to 0.001 ppm for an 8 hour TWA, with a 15 minute STEL of 0.003 ppm. The proposal for TDI also recommends adding a “Skin” notation and making the cancer designation “A3 – Confirmed Animal Carcinogen with Unknown Relevance to Humans”.

8.2 Exposure controls

 Engineering Controls:

Local exhaust recommended for thermal processing operations, as required to reduce dust, gas, and vapor fume exposure below OSHA levels.

 Personal Protective Equipment:

|  |  |
| --- | --- |
| Type of Protection | Minimum Suggested Equipment |
| Hand | None required in normal use |
| Eye | None required in normal use. Safety glasses with side shields or safety goggles and face shield should be used in grinding operations. |
| Skin | None required in normal use |
| Respiratory | None required in normal use. For low temperature grinding operations wear a NIOSH approved dust respirator. If generating gas, vapor, and fumes from hot wire, hot knife, or other thermal processing operations (including potentially some grinding operations) wear a NIOSH approved air-purifying respirator with organic cartridge or supplied-air respirator if ventilation is inadequate. Replace cartridge according to respirator manufacturer’s changeout schedule |

## 9. Physical and Chemical Properties

|  |  |  |  |
| --- | --- | --- | --- |
| Property | Value | Property | Value |
| *Appearance* | Solid | *Odor* | None |
| *Odor Threshold* | N/A | *pH* | N/A |
| *Melting/Freezing Pt.* | >150°C (302°F) | *Initial Boiling Pt./Range* | N/A |
| *Flash Pt.* | N/A | *Evaporation Rate* | N/A |
| *Flammability**(solid, gas)* | Dusts from processing operations may be combustible | *Upper/Lower Flammability Limits or Explosive Limits* | N/A |
| *Vapor Pressure* | N/A | *Vapor Density* | N/A |
| *Relative Density* | ~1.0-1.3 (23°C/73°F) | *Solubility(ies)* | Not soluble in water |
| *Partition Coefficient: n-octanol/water* | N/A | *Auto-ignition Temperature* | N/A |
| *Decomposition Temperature* | >150°C (302°F) | *Viscosity (Dynamic)* | N/A |

## 10. Stability and Reactivity

10.1 Reactivity Not reactive under normal use.

10.2 Chemical Stability Stable under normal use/storage conditions.

10.3 Possibility of hazardous reactions No dangerous reactions will occur under normal use/storage conditions.

10.4 Conditions to avoid Exposure to extreme temperatures and contact unwanted contact with incompatible materials should be avoided.

10.5 Incompatible materials Strong acids or bases.

10.6 Hazardous decompositions products

Decomposition through burning produces fumes consisting of organic particulate, gaseous hydrocarbons, carbon dioxide, carbon monoxide and may contain traces of toluene diisocyanate (TDI) or diphenylmethane diisocyanate (MDI), other isocyanates, MBOCA, hydrogen cyanide, acrolein, and oxides of nitrogen.

## 11. Toxicological Information

11.1 Information on toxicological effects

 Acute Toxicity (product): No data available on product.

 Skin and eye corrosion/irritation (product) No data available on product.

 Sensitization (product): No data available on product.

 Mutagenicity: No data available on product.

 Carcinogenicity: No data available on product.

 Reproductive Toxicity: No data available on product.

 STOT-SE: No data available on product.

 STOT-SE (toluene diisocyanate): Respiratory Tract Irritant

 STOT-RE: No data available on product.

 Aspiration: Not an aspiration hazard

## 12. Ecological Information

12.1 Toxicity Not applicable under normal conditions.

12.2 Persistence and degradability Product is not expected to rapidly biodegrade.

12.3 Bioaccumulative potential Not data available on product.

12.4 Mobility in soil No data available on product.

## 13. Disposal Considerations

13.1 Waste treatments methods

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

## 14. Transport Information

14.1 UN number: Not regulated

14.2 Proper shipping name: Not regulated

14.3 Hazard class: Not regulated

14.4 Packing group: Not regulated

14.5 Environmental hazards: Not regulated

14.6 Special precautions for the user: Not regulated

14.7 Transport in bulk information: Not regulated

## 15. Regulatory Information

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

 **TSCA** Health & Safety Reporting List: N/A

 Chemical Test Rules: N/A

 Section 12b: N/A

 TSCA Significant New Use Rule: N/A

**CERCLA** Hazardous Substances and corresponding RQs: N/A

**SARA** Section 302 Extremely Hazardous Substances: N/A

 SARA Codes: N/A

 Section 313: N/A

**Clean Air Act:** N/A

**Clean Water Act:** N/A

**U.S. State Regulations**  California Prop 65: N/A

Other States: N/A

**International Regulations** European/International Regulations N/A

**Canada** DSL/NDSL: N/A

 WHMIS: N/A

15.2 Chemicals safety assessment No data available

## 16. Other Information

**SDS Creation Date: 29 May 2015**

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-SE** – 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 | **(N)DSL** –(Non-) Domestic Substances List | **WHMIS -** Workplace Hazardous Materials Information System |

Note: This safety data sheet is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. It is not meant to be an all-inclusive document on worldwide hazard communication regulation. This information is believed to be accurate as of the date issued. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent exposures, property damage, or release to the environment. No warranty is expressed or implied with respect to the information herein supplied, and no responsibility for injury to the recipient or third persons, or for any damage to any property is assumed.