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Revision Number 4

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name **META PHENYLENE DIAMINE-CYMER**

Other means of identification

Product Code 1152502
CAS Number 108-45-2
Formula C₆H₈N₂
Synonyms 1,3-Benzenediamine; m-Phenylenediamine
UN-No UN1673

Recommended use of the chemical and restrictions on use

Recommended Use Dye Intermediates
Uses advised against Do not use where contact with food or drinking water is possible. Avoid prolonged contact with eyes, skin, and clothing.

Details of the supplier of the safety data sheet

Supplier Address ACETO US, LLC
4 Tri Harbor Court
Port Washington, NY 11050-4661
Phone: (516) 627-6000
Fax: (516) 627-6093
Email: aceto@aceto.com

Emergency telephone number(s)

ChemTrec: 1-800-424-9300 Outside of the United States: 1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Serious eye damage/eye irritation	Category 2A
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Chronic aquatic toxicity	Category 1
Acute aquatic toxicity	Category 2

Label elements

Emergency Overview

Signal Word**DANGER****Hazard statements**

Toxic if swallowed
 Toxic in contact with skin
 Toxic if inhaled
 Causes serious eye irritation
 May cause an allergic skin reaction
 Suspected of causing genetic defects
 Very toxic to aquatic life with long lasting effects

**Appearance**

White Crystalline Powder (turns red on exposure to air)

Physical State

Solid

Odor

Rotten egg-like

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 Specific treatment (see supplemental first aid instructions on this label)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present .
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of soap and water
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 Call a POISON CENTER or doctor/physician
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None known

Other Information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms 1,3-Benzenediamine; m-Phenylenediamine

Formula C6H8N2

Chemical name	CAS No.	Weight-%	North American Hazard Indicator
m-Phenylenediamine	108-45-2	100	0.1 mg/m ³ TWA Supplement 7 [1987]; Monograph 16 [1978]

4. FIRST AID MEASURES

First Aid Measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or poison control center immediately.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-Protection of the First Aider	Use personal protective equipment as required. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed

Signs and Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

<u>Flammable properties</u>	Dust may form explosive mixture in air.
<u>Suitable Extinguishing Media</u>	Water spray. Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO ₂).
<u>Unsuitable Extinguishing Media</u>	No information available.
<u>Hazardous Combustion Products</u>	Carbon oxides. Nitrogen oxides.
<u>Explosion Data</u>	Not available
Sensitivity to mechanical impact	Not available.
Sensitivity to static discharge	Not available.

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal Precautions**

Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Avoid contact with eyes, skin and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental Precautions

Local authorities should be advised if significant spillages cannot be contained. Prevent further leakage or spillage if safe to do so. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

Methods and material for containment and cleaning up**Methods for Clean-up**

Evacuate personnel to safe areas. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Use only in an area equipped with a safety shower. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation. Use only in well-ventilated areas. Do not breathe vapors/dust. Avoid contact with eyes, skin and clothing. Avoid repeated exposure.

Conditions for safe storage, including any incompatibilities**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. May discolor on exposure to light. Protect from light. Sensitive to air.

Incompatible Materials

Strong oxidizing agents. Acids. Acid anhydrides. Acid halides. Chloroformates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
m-Phenylenediamine 108-45-2	0.1 mg/m ³ TWA	-	-

Appropriate engineering controls**Engineering Controls**

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Tight sealing safety goggles.
Skin and body protection	Use suitable eye protection and gloves.
Respiratory Protection	In case of insufficient ventilation, wear suitable respiratory equipment.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White Crystalline Powder (turns red on exposure to air)	
Physical State	Solid	
Odor	Rotten egg-like	
Odor Threshold	Not available	
Property	Values	Remarks • Method
pH	8	
Melting point / Freezing point	62 - 63 °C	Literary Reference
Boiling point / boiling range	284 °C	
Flash Point	187 °C	CC (closed cup)
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air	No information available	
Upper flammability limit	No information available	
Lower flammability limit	Not available	
Vapor Pressure	0.003 mmHg @ 20°C	
Vapor Density	3.7	
Specific Gravity	1.139	
Water Solubility	350 g/L @ 20°C	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	Not available	
Autoignition temperature °C	560 °C	Estimated
Decomposition temperature	No Data Available	
Kinematic Viscosity	No information available	
Dynamic Viscosity	Not available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	
<u>Other Information</u>		
Softening Point	No information available	
Molecular Weight	108.14 g/mol	
VOC content	This product contains VOCs	
Liquid Density	No information available	
Bulk density	No information available	
Corrosion characteristics	No information available	

10. STABILITY AND REACTIVITY

Reactivity	Not applicable.
Chemical Stability	Stable under normal conditions
Conditions to Avoid	Heat, flames and sparks. Air. May darken on exposure to light. Protect from light.
Incompatible Materials	Strong oxidizing agents. Acids. Acid anhydrides. Acid halides. Chloroformates.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx). Hydrogen cyanide (hydrocyanic acid).

Possibility of Hazardous Reactions

None under normal processing

11. TOXICOLOGICAL INFORMATION**Product Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
m-Phenylenediamine	= 156 mg/kg (Rat)	= 1100 mg/kg (Rat)	= 0.501 mg/L (Rat) (4h)

The following values are calculated based on chapter 3.1 of the GHS document

Information on likely routes of exposure

Eyes	Irritating to eyes. Avoid contact with eyes.
Skin	Toxic in contact with skin. Avoid contact with skin.
Inhalation	Toxic by inhalation. Avoid breathing dust.
Ingestion	Toxic if swallowed. Do not take internally.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
m-Phenylenediamine 108-45-2	A4 - Not Classifiable as a Human Carcinogen	Group 3	-	-

Serious eye damage/irritation	No information available.
Skin Corrosion/Irritation	No information available.
Sensitization	May cause allergic skin reaction.
Reproductive Effects	No information available.
Mutagenic Effects	Suspected of causing genetic defects.
Developmental Effects	No information available.
STOT - single exposure	No information available.
STOT - Repeated Exposure	No information available.
Chronic Toxicity	Avoid repeated exposure.
Target Organ Effects	Eyes, Skin, Respiratory system, Liver, Kidney, Bladder.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects
Avoid release to the environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
m-Phenylenediamine 108-45-2	2.4: 96 h Pseudokirchneriella subcapitata mg/L EC50	1600: 96 h Pimephales promelas mg/L LC50	-	= 5.9 mg/L EC50 5.9: 48 h Daphnia magna mg/L EC50

Persistence/Degradability No information available.

Bioaccumulation/Accumulation No information available.

Mobility in Soil No information available.

Chemical name	log Pow =
m-Phenylenediamine 108-45-2	-0.3

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods Contact waste disposal services. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

US EPA Waste Number

14. TRANSPORT INFORMATION

DOT

UN-No UN1673
Proper Shipping Name Phenylenediamines
Hazard class 6.1
Packing Group III
Description UN1673,Phenylenediamines,6.1,PG III
Emergency Response Guide Number 153

TDG

UN-No UN1673
Proper Shipping Name Phenylenediamines
Hazard class 6.1
Packing Group III
Description UN1673,Phenylenediamines,6.1,PG III

MEX

UN-No UN1673

Proper Shipping Name	Phenylenediamines
Hazard class	6.1
Packing Group	III
Description	UN1673 Phenylenediamines,6.1,III

ICAO

UN-No	UN1673
Proper Shipping Name	Phenylenediamines
Hazard class	6.1
Packing Group	III
Description	UN1673,Phenylenediamines,6.1,PG III

IATA

UN number	UN1673
Transport hazard class(es)	6.1
Packing Group	III
Description	UN1673,Phenylenediamines,6.1,PG III

IMDG

UN number	UN1673
Transport hazard class(es)	6.1
Packing Group	III
EmS No.	F-A, S-A
Description	UN1673, Phenylenediamines,6.1,PG III

RID

UN-No	UN1673
Transport hazard class(es)	6.1
Packing Group	III
Classification Code	T2
Description	UN1673 Phenylenediamines,6.1,III,RID
ADR/RID-Labels	6.1

ADR

UN-No	UN1673
Proper Shipping Name	Phenylenediamines
Hazard Class	6.1
Packing Group	III
Classification Code	T2
Description	UN1673 Phenylenediamines,6.1,III,ADR
Labels	6.1

ADN

Proper Shipping Name	Phenylenediamines (o-, m-, p-)
Transport hazard class(es)	6.1
Packing Group	III
Classification Code	T2
Special Provisions	279, 802
Description	UN1673 Phenylenediamines (o-, m-, p-),6.1,III
Hazard label(s)	6.1
Limited Quantity	LQ9
Equipment Requirements	PP, EP

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
Canada (DSL)	Complies
EU (EINECS)	Complies
EU (ELINCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Complies

Korea (KECL)	Complies
Philippines (PICCS)	Complies
Australia (AICS)	Complies
Mexico INV	Complies
Taiwan INV	Complies

Chemical name	U.S.A. (TSCA)	Canada (DSL)	EU (EINECS)	EU (ELINCS)	
m-Phenylenediamine	Present Sunset 07/05/1997	Present	X	-	
Component	Japan (ENCS)	China (IECSC)	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
-	Present (3)-185	Present	Present	Present	Present
Chemical name	Mexico INV		Taiwan INV		
m-Phenylenediamine 108-45-2	Present		Present		

Federal Regulations

Component	TSCA Listing
m-Phenylenediamine 108-45-2 (100)	40 CFR 799.3300

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Component	SARA 313 - Threshold Values
m-Phenylenediamine 108-45-2 (100)	1.0 % de minimis concentration

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any HAPs.

VOC content

This product contains VOCs

Chemical name	CAS No.	VOCs
m-Phenylenediamine	108-45-2	Present

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
m-Phenylenediamine 108-45-2	-	-	-	-

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	CERCLA/SARA Hazardous Substances	CERCLA/SARA RQ	RQ
m-Phenylenediamine 108-45-2	-	-	-

State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

This product contains the following State Right-to-Know chemicals:

Chemical name	New Jersey	Massachusetts	Illinois	Rhode Island	Pennsylvania
m-Phenylenediamine 108-45-2	sn 1316	Present	-	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

Canada

WHMIS Statement

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

16. OTHER INFORMATION

NFPA

Health 2

Flammability 1

Instability 0

Physical Hazard 0

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Not available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,

transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet