



Material Safety Data Sheet (MSDS)

Issue/Revision Date: 27 October 2011

Section 1. Product and Company Information

Chemical Name: Derivatizing Solution containing 1-(2-Methoxyphenyl) Piperazine (MOPIP) in Toluene
Synonym(s): None
Tradename: A component of ISO-CHEK® Sampling System
Catalog No.: 225-9050, -9023, and -9023A

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Section 2. Composition/Information on Ingredient(s)

Chemical Name	Formula	CAS #	Molecular Weight
1-(2-Methoxyphenyl) Piperazine	C ₁₁ H ₁₆ N ₂ O	35386-24-4	Not reported
Toluene	C ₆ H ₅ -CH ₃ , C ₇ H ₈	108-88-3	92.14

Important Note:

As required by U.S. OSHA regulations, hazard information supplied below is based on exposure to reagent-grade (full-strength) chemicals.

Section 3. Hazards Identification

Label Precautionary Statements

- Irritant
- Irritating to eyes, respiratory system, and skin
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Wear suitable gloves and eye/face protection.
- Hygroscopic
- Keep tightly closed.

Emergency Overview

POISON! DANGER! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. VAPOR HARMFUL. FLAMMABLE LIQUID AND VAPOR. MAY AFFECT LIVER, KIDNEYS, BLOOD SYSTEM, OR CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

SAF-T-DATA™ Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)

Flammability Rating: 3 - Severe (Flammable)

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation

Inhalation may cause irritation of the upper respiratory tract. Symptoms of overexposure may include fatigue, confusion, headache, dizziness, and drowsiness. Peculiar skin sensations (e. g. pins and needles) or numbness may be produced. Very high concentrations may cause unconsciousness and death.

Ingestion

Swallowing may cause abdominal spasms and other symptoms that parallel over-exposure from inhalation. Aspiration of material into the lungs can cause chemical pneumonitis, which may be fatal.

Skin Contact

Causes irritation. May be absorbed through skin.

Eye Contact

Causes severe eye irritation with redness and pain.

Chronic Exposure

Reports of chronic poisoning describe anemia, decreased blood cell count, and bone marrow hypoplasia. Liver and kidney damage may occur. Repeated or prolonged contact has a defatting action, causing drying, redness, and/or dermatitis. Exposure to toluene may affect the developing fetus.

Aggravation of Pre-existing Conditions

Persons with pre-existing skin disorders or impaired liver or kidney function may be more susceptible to the effects of this substance. Alcoholic beverage consumption can enhance the toxic effects of this substance.

Section 4. First Aid Measures

Eye Contact

Immediately flush eyes with copious amounts of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Skin Contact

In case of contact, immediately wash skin with soap and copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician immediately.

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. CALL A PHYSICIAN IMMEDIATELY.

Ingestion

Aspiration hazard. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. If vomiting occurs, keep head below hips to prevent aspiration into lungs.

Section 5. Fire Fighting Measures

Fire:

Flash point:	7 C (45 F) CC
Autoignition temperature:	422 C (792 F)
Flammable limits in air % by volume:	LEL: 3.3; UEL: 19 Flammable liquid and vapor! Dangerous fire hazard when exposed to heat or flame. Vapors can flow along surfaces to distant ignition source and flash back.

Explosion

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire or explosion. Sensitive to static discharge.

Fire Extinguishing Media

Dry chemical, foam, or carbon dioxide. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures.

Special Information

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool.

Unusual Fire and Explosion Hazards

Emits toxic fumes under fire conditions.

Section 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. U.S. Regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. The toll free number for the U.S. Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

Section 7. Handling and Storage

Protect against physical damage. Store in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Refer to Section 8.

Section 8. Exposure Controls/Personal Protective Equipment (PPE)

Airborne Exposure Limits:

Toluene:

- OSHA Permissible Exposure Limit (PEL):
200 ppm (TWA); 300 ppm (acceptable ceiling conc.); 500 ppm (maximum conc.)
- ACGIH Threshold Limit Value (TLV):
50 ppm (TWA) skin, A4 - Not Classifiable as a Human Carcinogen

Ventilation System

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved)

If the exposure limit is exceeded and engineering controls are not feasible, a half-face organic vapor respirator may be worn for up to ten times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection

Wear impervious protective clothing, including boots, heavy gloves, lab coat, apron, or coveralls, as appropriate, to prevent skin contact. Use appropriate PPE material as substance will attack some forms of plastics, rubber, and coatings.

Eye Protection

Use chemical safety goggles and/or a full-face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

- Avoid contact and inhalation.
- Do not get in eyes, on skin, or on clothing.
- Wash thoroughly after handling.
- Irritant
- Keep tightly closed.
- Store in a cool, dry place.

Section 9. Physical/Chemical Properties

Appearance of 1-(2-Methoxyphenyl) Piperazine (MOPIP)

Color: Off-white
Form: Liquid

Chemical Properties of MOPIP

Property	Value
Boiling Point	130 C to 133 C/.1 mm
Melting Point	37 C to 40 C
Flashpoint	> 230 F (95 C)
Specific Gravity	1.095

Appearance of Toluene

Color: Clear, colorless liquid
Form: Aromatic benzene-like

Chemical Properties of Toluene

Property	Value
Solubility	0.05 gm/100 gm water @ 20 C (68 F)
Specific Gravity	0.86 @ 20 C / 4 C
% Volatiles by vol. @ 21 C (70 F)	100
Boiling Point	111 C (232 F)
Melting Point	-95 C (-139 F)
Vapor Density (Air=1)	3.14
Vapor Pressure (mm Hg)	22 @ 20 C (68 F)
Evaporation Rate (BuAc=1)	2.24

Section 10. Stability and Reactivity

Stability

Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products

Toxic fumes of carbon dioxide, carbon monoxide, and nitrogen oxides may form when heated to decomposition.

Hazardous Polymerization

Will not occur

Incompatibilities

Heat, flame, strong oxidizers, nitric, sulfuric, and other strong acids, chlorine, nitrogen tetroxide; will attack some forms of plastics, rubber, coatings.

Conditions to Avoid

Heat, flames, ignition sources, and incompatibles

Section 11. Toxicological Information

Acute Effects of MOPIP:

- May be harmful by inhalation, ingestion, or skin absorption
- Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.
- Causes skin irritation

To the best of our knowledge, the chemical, physical, and toxicological properties of MOPIP have not been thoroughly investigated.

Toxicological Data for Toluene

Oral rat LD50: 636 mg/kg; skin rabbit LD50: 14100 uL/kg; inhalation rat LC50: 49 gm/m³/4H; Irritation data: skin rabbit, 500 mg, Moderate; eye rabbit, 2 mg/24H, Severe. Investigated as a tumorigen, mutagen, reproductive effector.

Reproductive Toxicity of Toluene

Has shown some evidence of reproductive effects in laboratory animals

Cancer Lists

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Toluene (108-88-3)	No	No	3

Section 12. Ecological Information

Environmental Fate

When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. Bioconcentration factor = 13.2 (eels).

Environmental Toxicity

This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

Section 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use, or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

Section 14. Transport Information

	Domestic (Land, D.O.T.)	International (Water, I.M.O.)
Proper Shipping Name	TOLUENE	TOLUENE
Hazard Class	3	3
UN/NA	UN1294	UN1294
Packing Group	II	II
Information reported for product/size	390 LB	390 LB

Contact company for further transportation information.

Section 15. Regulatory Information

Chemical Inventory Status - Part 1

Ingredient	TSCA	EC	Japan	Australia
Toluene (108-88-3)	Yes	Yes	Yes	Yes

Chemical Inventory Status - Part 2

Ingredient	Korea	DSL	NDSL	Phil.
Toluene (108-88-3)	Yes	Yes	No	Yes

Federal, State, & International Regulations - Part 1

Ingredient	-----SARA 302-----		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Toluene (108-88-3)	No	No	Yes	No

Federal, State, & International Regulations - Part 2

Ingredient	CERCLA	-----RCRA-----	-----TSCA-----
		261.33	8(d)
Toluene (108-88-3)	1000	U220	No

Chemical Weapons Convention: No
TSCA 12(b): No
CDTA: Yes

SARA 311/312:

Acute: Yes
Chronic: Yes
Fire: Yes
Pressure: No

Reactivity: No (Pure / Liquid)

WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Australian Hazchem Code: 3[Y]E

Poison Schedule: S6

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR), and the MSDS contains all of the information required by the CPR.

Section 16. Other Information

NFPA Ratings

Health: 2
Flammability: 3
Reactivity: 0

Label Hazard Warning:

POISON! DANGER! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. VAPOR HARMFUL. FLAMMABLE LIQUID AND VAPOR. MAY AFFECT LIVER, KIDNEYS, BLOOD SYSTEM, OR CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:

- Keep away from heat, sparks and flame.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Avoid breathing vapor.
- Avoid contact with eyes, skin, and clothing.

Label First Aid:

- Aspiration hazard. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head below hips to prevent aspiration into lungs.
- If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes.
- Wash clothing before reuse.
- In all cases, call a physician immediately.

Product Use:

Laboratory Reagent

Disclaimer

For approved uses only. Not for drug, household, or other uses.

The above information is believed to be correct, but does not purport to be all-inclusive and shall be used only as a guide. SKC Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.