

## MATERIAL SAFETY DATA SHEET

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Version 1.4

## Section 1 - Product and Company Information

Product Name (-)-METOPROLOL-(+)-TARTRATE  
Product Number M5391  
Brand SIGMA

Company Sigma-Aldrich Canada, Ltd  
Address 2149 Winston Park Drive  
Oakville ON L6H 6J8 CA  
Technical Phone: 9058299500  
Fax: 9058299292  
Emergency Phone: 800-424-9300

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
(-)-METOPROLOL-(+)-TARTRATE	56392-17-7	No

Formula C15H25NO3.1/2C4H6O6  
Synonyms Beloc \* Betaloc \* H 93/26 \*  
(-)-1-(Isopropylamino)-3-(p-(2-methoxyethyl)phenoxy)-2-propanol hemi-L-tartrate \*  
(-)-1-(Isopropylamino)-3-(p-(2-methoxyethyl)phenoxy)-2-propanol tartrate (2:1) \* Lopresor \*  
Metoprolol hemitartrate \* Metoprolol tartrate (2:1) \* 2-Propanol,  
1-(4-(2-methoxyethyl)phenoxy)-3-((1-methylethyl)amino)-, (-)-, tartrate (2:1) \* Seloken \* Slow  
lopresor  
RTECS Number: UB7450100

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Caution: Avoid contact and inhalation. Target organ(s): Heart.  
Lungs.

## HMIS RATING

HEALTH: 1\*  
FLAMMABILITY: 0  
REACTIVITY: 0

## NFPA RATING

HEALTH: 1  
FLAMMABILITY: 0  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

#### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### INHALATION EXPOSURE

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

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#### Section 5 - Fire Fighting Measures

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##### FLASH POINT

N/A

##### AUTOIGNITION TEMP

N/A

##### FLAMMABILITY

N/A

##### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

##### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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#### Section 6 - Accidental Release Measures

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##### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

##### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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#### Section 7 - Handling and Storage

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##### HANDLING

User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

##### STORAGE

Suitable: Keep tightly closed. Store in a cool dry place.

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#### Section 8 - Exposure Controls / PPE

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##### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

##### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

##### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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## Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	684.8 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.

Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

### TARGET ORGAN(S) OR SYSTEM(S)

Heart. Lungs.

#### SIGNS AND SYMPTOMS OF EXPOSURE

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

#### CONDITIONS AGGRAVATED BY EXPOSURE

The toxicological properties have not been thoroughly investigated.

#### TOXICITY DATA

Oral Oral

Rat Rat

5500 mg/kg 5500 mg/kg

LD50 LD50

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Convulsions or effect on seizure threshold. Behavioral:Somnolence (general depressed activity). Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold.

Intraperitoneal Intraperitoneal

Rat Rat

219 MG/KG 219 MG/KG

LD50 LD50

Subcutaneous Subcutaneous

Rat Rat

1150 MG/KG 1150 MG/KG

LD50 LD50

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold. Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold.

Intravenous Intravenous

Rat Rat

90 MG/KG 90 MG/KG

LD50 LD50

Remarks: Lungs, Thorax, or Respiration:Respiratory stimulation. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Respiratory stimulation. Behavioral:Somnolence (general depressed activity).

Oral Oral

Mouse Mouse

1500 mg/kg 1500 mg/kg

LD50 LD50

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold. Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold.

Intraperitoneal Intraperitoneal

Mouse Mouse

202 MG/KG 202 MG/KG

LD50 LD50

Subcutaneous Subcutaneous

Mouse Mouse

510 MG/KG 510 MG/KG

LD50 LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Behavioral:Convulsions or effect on seizure threshold.

Behavioral:Somnolence (general depressed activity).

Intravenous Intravenous

Mouse Mouse

90 MG/KG 84 MG/KG

LD50 LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Behavioral:Excitement.

Oral Oral

Dog Dog

1090 mg/kg 1090 mg/kg

LD50 LD50

Oral Oral

Rabbit Rabbit

604 mg/kg 604 mg/kg

LD50 LD50

Intravenous Intravenous

Rabbit Rabbit

28700 UG/KG 28700 UG/KG

LD50 LD50

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat Rat

Dose: 352 MG/KG 352 MG/KG

Route of Application: Oral Oral

Exposure Time: (7-17D PREG) (7-17D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rabbit Rabbit

Dose: 52 MG/KG 52 MG/KG

Route of Application: Oral Oral

Exposure Time: (6-18D PREG) (6-18D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Musculoskeletal system.

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat Rat

Dose: 5500 MG/KG 5500 MG/KG

Route of Application: Oral Oral

Exposure Time: (7-17D PREG) (7-17D PREG)

Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death. Effects on Embryo or Fetus: Fetal death. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Litter size (e.g.; #

fetuses per litter; measured before birth).

Species: Rat Rat

Dose: 5500 MG/KG 5500 MG/KG

Route of Application: Oral Oral

Exposure Time: (7-17D PREG) (7-17D PREG)

Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Rabbit Rabbit

Dose: 832 MG/KG 832 MG/KG

Route of Application: Oral Oral

Exposure Time: (6-18D PREG) (6-18D PREG)

Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetal death. Effects on Embryo or Fetus: Fetal death. Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

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## Section 12 - Ecological Information

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No data available.

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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## Section 15 - Regulatory Information

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### US CLASSIFICATION AND LABEL TEXT

US Statements: Caution: Avoid contact and inhalation. Target organ(s): Heart. Lungs.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

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