SILVER FERN CHEMICAL

Material Safety Data Sheet

MALEIC ANHYDRIDE BRIQUETTES 99%

SECTION 1: IDENTIFICATION

Product Name: MALEIC ANHYDRIDE BRIQUETTES 99%

CAS Number: 108-31-6

RTECS Number: ON3675000

RCRA Waste Number: U147

Formula: C4H2O3

Synonyms: Anhydrid kyseliny maleinove (Czech) * cis-Butenedioic anhydride * 2,5-Furandione * Maleic acid anhydride * Maleic anhydride (ACGIH:OSHA) * Maleinanhydrid (Czech) * Toxilic anhydride *

Company
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24 Hour Emergency Contact
Infotrac 800-535-5053
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SECTION 2: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW
Corrosive.
Harmful if swallowed. Causes burns. May cause sensitization by inhalation and skin contact.
Sternutator.

HMIS RATING
HEALTH: 3*
FLAMMABILITY: 1
REACTIVITY: 1

NFPA RATING
HEALTH: 3
FLAMMABILITY: 1
REACTIVITY: 1

*additional chronic hazards present.

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

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name	CAS #	SARA 313
MALEIC ANHYDRIDE	108-31-6	Yes

SECTION 4: FIRST AID MEASURES

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

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

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT N/A

AUTOIGNITION TEMP N/A

FLAMMABILITY N/A

EXTINGUISHING MEDIA
Suitable: Carbon dioxide.
Unsuitable: Do not use dry chemical powder extinguisher on this material.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE

HANDLING
User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS
Moisture sensitive.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.25 PPM
USA	MSHA	Standard-air TWA	0.25 PPM (1 MG/M3)

	USA	OSHA. PEL	8H TWA	0.25 PPM (1 MG/M3)
	New Zealand	OEL		
	Remarks: check ACGIH TLV			
	USA	NIOSH	TWA	0.25 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	0.5 MG/M3
Poland		NDSCh	1 MG/M3
Poland		NDSP	---

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance **Physical State:** Solid
Color: White

Property	Value	At Temperature or Pressure
Molecular Weight	98.06 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	52 ℃	
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

SECTION 10: STABILITY AND REACTIVITY

STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents, Alkali metals, Amines.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

SENSITIZATION

Sensitization: May cause allergic respiratory and skin reactions

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. May cause sneezing. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and

skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema.

TOXICITY DATA

Oral
Rat
400 mg/kg
LD50

Intraperitoneal
Rat
97 MG/KG
LD50

Oral
Mouse
465 mg/kg
LD50

Oral
Rabbit
875 mg/kg
LD50

Skin
Rabbit
2620 mg/kg
LD50

Oral
Guinea pig
390 mg/kg
LD50

Skin
Guinea pig
> 20000 mg/kg

LD50

IRRITATION DATA

Eyes
Rabbit
1 %
Remarks: Severe irritation effect

CHRONIC EXPOSURE - CARCINOGEN
Species: Rat
Route of Application: Subcutaneous
Dose: 1220 MG/KG
Exposure Time: 61W
Frequency: I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

CHRONIC EXPOSURE - TERATOGEN
Species: Rat
Dose: 1400 MG/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - MUTAGEN
Species: Hamster
Dose: 230 MG/L
Cell Type: lung
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD
Species: Rat
Dose: 4060 MG/KG
Route of Application: Oral
Exposure Time: (MULTIGENERATIONS)
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Rat
Dose: 150 MG/KG
Route of Application: Oral

Exposure Time: (MULTIGENERATION)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

SECTION 12: ECOLOGICAL INFORMATION

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. 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.

SECTION 14: TRANSPORT INFORMATION

DOT
Proper Shipping Name: Maleic anhydride
UN#: 2215
Class: 8
Packing Group: Packing Group III
Hazard Label: Corrosive
PIH: Not PIH

IATA
Proper Shipping Name: Maleic anhydride
IATA UN Number: 2215
Hazard Class: 8
Packing Group: III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: C
Indication of Danger: Corrosive.
R: 22-34-42/43
Risk Statements: Harmful if swallowed. Causes burns. May cause sensitization by inhalation and skin contact.
S: 22-26-36/37/39-45
Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Corrosive.
Risk Statements: Harmful if swallowed. Causes burns. May cause sensitization by inhalation and skin contact.
Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Sternutator.
UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes
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: Yes
NDSL: No

SECTION 16: OTHER INFORMATION

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

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DISCLAIMER OF RESPONSIBILITY

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