

SIGMA-ALDRICH		
MATERIAL SAFETY DATA SHEET		
		Date Printed: 04/13/2010 Date Updated: 02/18/2010 Version 1.5
Section 1 - Product and Company Information		
Product Name	1,1-DIMETHYLBIGUANIDE HYDROCHLORIDE	
Product Number	D5035	
Brand	SIGMA	
Company Address	Sigma-Aldrich Canada, Ltd 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
1,1-DIMETHYLBIGUANIDE HYDROCHLORIDE	1115-70-4	No
Formula	C4H11N5.ClH	
Synonyms	Diabefagos * Diformin * Dimethylbiguanide hydrochloride * N,N-Dimethylbiguanide hydrochloride * 1,1-Dimethylbiguanide hydrochloride * Gliformin * Glucophage * Haurymellin * Imidodicarbonimidic diamide, N,N-dimethyl-, monohydrochloride (9CI) * Meguan * Metformin hydrochloride	
RTECS Number:	DUI800000	
Section 3 - Hazards Identification		
EMERGENCY OVERVIEW		
Harmful.		
Harmful if swallowed. Irritating to eyes and skin.		
HMIS RATING		
HEALTH: 1		
FLAMMABILITY: 0		
REACTIVITY: 1		
NFPA RATING		
HEALTH: 1		
FLAMMABILITY: 0		
REACTIVITY: 1		
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.		
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: 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. 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 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.		
Section 7 - Handling and Storage		
HANDLING		
User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.		
STORAGE		
Suitable: Keep tightly closed.		
SPECIAL REQUIREMENTS		
Hygroscopic.		
Section 8 - Exposure Controls / PPE		
ENGINEERING CONTROLS		
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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). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.		
Hand: Compatible chemical-resistant gloves.		
Eye: Chemical safety goggles.		
GENERAL HYGIENE MEASURES		
Wash thoroughly after handling.		
Section 9 - Physical/Chemical Properties		
Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	165.63 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	223.0 - 226.0 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	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		
Conditions to Avoid: Moisture.		
Materials to Avoid: Strong oxidizing agents.		
HAZARDOUS DECOMPOSITION PRODUCTS		
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen chloride gas.		
HAZARDOUS POLYMERIZATION		
Hazardous Polymerization: Will not occur		
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Section 11 - Toxicological Information		
ROUTE OF EXPOSURE		
Skin Contact: Causes skin irritation.		
Skin Absorption: May be harmful if absorbed through the skin.		
Eye Contact: Causes eye irritation.		
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.		
Ingestion: Harmful if swallowed.		
SIGNS AND SYMPTOMS OF EXPOSURE		
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.		
TOXICITY DATA		
Oral		
Rat		
1000 mg/kg		
LD50		
Intraperitoneal		
Rat		
500 MG/KG		
LD50		
Subcutaneous		
Rat		
300 MG/KG		
LD50		
Oral		
Mouse		
1450 mg/kg		
LD50		
Intraperitoneal		
Mouse		
420 MG/KG		
LD50		
Subcutaneous		
Mouse		
225 MG/KG		
LD50		
Intravenous		
Mouse		
180 MG/KG		
LD50		
Oral		
Rabbit		
350 mg/kg		
LD50		
Subcutaneous		
Rabbit		
150 MG/KG		
LD50		
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Oral		
Guinea pig		
500 mg/kg		
LD50		
Intraperitoneal		
Guinea pig		
200 MG/KG		
LD50		
Subcutaneous		
Guinea pig		
150 MG/KG		
LD50		
Intramuscular		
Guinea pig		
200 MG/KG		
LD50		
IRRITATION DATA		
Skin		
Rabbit		
500 mg		
Remarks: Mild irritation effect		
Eyes		
Rabbit		
100 mg		
Remarks: Mild irritation effect		
Eyes		
Rabbit		
100 mg		
4S		
Remarks: Rinsed		
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: 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		
EU ADDITIONAL CLASSIFICATION		
Symbol of Danger: Xn		
Indication of Danger: Harmful.		
R: 22-36/38		
Risk Statements: Harmful if swallowed. Irritating to eyes and skin.		
S: 26-36		
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.		
US CLASSIFICATION AND LABEL TEXT		
Indication of Danger: Harmful.		
Risk Statements: Harmful if swallowed. Irritating to eyes and skin.		
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.		
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		
Section 16 - Other Information		
DISCLAIMER		
For R&D use only. Not for drug, household or other uses.		
WARRANTY		
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2010 Sigma-Aldrich Co. License granted to make unlimitedpaper copies for internal use only.		
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