SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2023
Date Updated: Jan 29, 2023

SECTION 1. - - - - - - - - - PRODUCT AND COMPANY IDENTIFICATION- - - - - - - - - -

Product Name	Imidazole
Product Code(s)	IB0277
Recommended Use	For Laboratory Research Use Only Not for Human or Animal Drug Use
Supplier	Bio Basic Inc.
Address	20 Konrad Crescent, Markham, Ontario, Canada, L3R 8T4
Telephone	(905) 474 4493
Fax	(905) 474 5794
For Chemical Emergency Phone#	(416) 995 9730

SECTION 2. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -

Classification of the substance or mixture

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1C), H314
Serious eye damage (Category 1), H318
Reproductive toxicity (Category 1B), H360

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H360	May damage fertility or the unborn child.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/ protective clothing/ eye protection/ face
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove

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	contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -

Chemical Name	EC No.	CAS-No	Weight %
Imidazole	206-019-2	288-32-4	≤100

SECTION 4. - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - -

Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -

Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Hydrogen cyanide (hydrocyanic acid)
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

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Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Avoid generation of dusts.

Reference to other sections
For disposal see section 13.

SECTION 7. - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

Precautions for safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Conditions for safe storage, including any incompatibilities
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage class
Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects.

Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

Control parameters

Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Inhalation	Long-term systemic effects	10.6 mg/m3
Workers	Skin contact	Long-term systemic effects	1.5mg/kg BW/d

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	0.0425 mg/kg
Marine water	0.013 mg/l
Fresh water	0.13 mg/l
Marine sediment	0.0336 mg/kg

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Fresh water sediment	0.336 mg/kg
Sewage treatment plant	10 mg/l
Aquatic intermittent release	1.3 mg/l

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

Information on basic physical and chemical properties

a)	Appearance	Form: crystalline, flakes Colour: white
b)	Odour	amine-like
c)	Odour Threshold	No data available
d)	pH	10.5 at 67 g/l at 20 °C (68 °F)
e)	Melting point/freezing point	Melting point/range: 88 - 91 °C (190 - 196 °F) - lit.
f)	Initial boiling point and boiling range	256 °C (493 °F) - lit.
g)	Flash point	145 °C (293 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	0.003 hPa (0.002 mmHg) at 20 °C (68 °F)

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l)	Vapour density	No data available
m)	Relative density	1.030 g/cm3
n)	Water solubility	633 g/l at 20 °C (68 °F)
o)	Partition coefficient: n-octanol/water	log Pow: -0.02 at 25 °C (77 °F)
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

Other safety information

Bulk density	550 kg/m3
Dissociation constant	7.15 at 25 °C (77 °F)

SECTION 10. - - - - - - - - -STABILITY AND REACTIVITY - - - - - - - - -

Reactivity
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents
Acid chlorides
Acid anhydrides
acids

Conditions to avoid
Strong heating.

Incompatible materials
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)
Other decomposition products - No data available In the event of fire: see section 5

SECTION 11. - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 970 mg/kg

Inhalation: No data available

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Dermal: No data available
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Corrosive after 1 to 4 hours of exposure - 4 h
(OECD Test Guideline 404)
(Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes serious eye damage.
(OECD Test Guideline 405)
Causes serious eye damage.

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: unscheduled DNA synthesis assay
Test system: rat hepatocytes
Method: OECD Test Guideline 482
Result: negative

Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
May damage the unborn child.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure

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No data available

Aspiration hazard
No data available

Additional Information
Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect) - 60 mg/kg
Remarks: Subchronic toxicity.

RTECS: NI3325000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. - - - - - - - - - ECOLOGICAL INFORMATION - - - - - - - - - -

Toxicity

Toxicity to fish	static test LC50 - Leuciscus idus (Golden orfe) - 280 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia (water flea) - 341.5 mg/l - 48 h
Toxicity to algae	static test EC50 - Scenedesmus quadricauda (Green algae) - 133 mg/l - 72 h
Toxicity to bacteria	static test EC50 - activated sludge - > 1,000 mg/l - 30 min (OECD Test Guideline 209)

Persistence and degradability

Biodegradability	aerobic - Exposure time 18 d Result: 90 - 100 % - Readily biodegradable. (OECD Test Guideline 301A)

Bioaccumulative potential
No data available

Mobility in soil
No data available

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects
No data available

SECTION 13. - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - -

Waste treatment methods

Product
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. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14. - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -

TDG (Canada)
UN number: 3263 Class: 8 Packing group: III
Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (Imidazole)

Labels: 8

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ERG Code: 154
Marine pollutant: no

IMDG

UN number: 3263 Class: 8 Packing group: III EMS-No: F-A, S-B Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (Imidazole)

IATA

UN number: 3263 Class: 8 Packing group: III
Proper shipping name: Corrosive solid, basic, organic, n.o.s. (Imidazole)

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -

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

SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - -

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.
Repr.	Reproductive toxicity
Skin Corr.	Skin corrosion

Further information: no limited for paper copy, just for internal uses.
For research use only. Not intended for human or animal diagnostic or therapeutic uses.

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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End of SDS

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CERTIFICATE OF ANALYSIS

Product	Imidazole
Grade	ACS
Formula	$C_3H_4N_2$
MW	68.08
CAS#	288-32-4
Product Code	IB0277(ID0277)
Lot No	Q3494000

Test Items	Specifications	Actual Results
Appearance	White to Off-White Crystals	White crystals
Assay	≥99.0% $C_3H_4N_2$	99.70% by GC
pH of 5% solution (@ 25°C)	9.5-11.0	9.6
Residue after Ignition	≤0.1%	0.07%
Iron	≤0.001%	<0.0005%
Water	≤0.2%	0.16%

Storage: 18~25°C, protect from moisture.

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