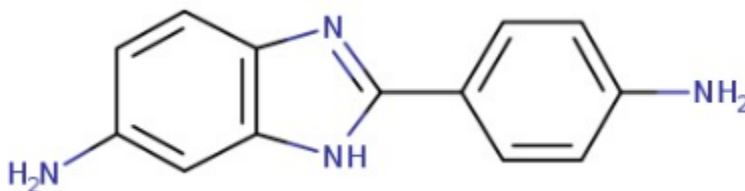


1. General Statements

It is a benzimidazole derivative with two amino groups — one on the benzimidazole ring (position 5) and another on the attached phenyl ring (para position). The molecule consists of a benzimidazole core, a fused bicyclic system composed of benzene and imidazole ring. Likely to be a solid at room temperature. It may have moderate solubility in polar organic solvents due to the presence of amino groups. As with many aromatic amines and heterocyclic compounds, handle with care.

2. Chemical identification.

Name : 5-Amino-2-(4-aminophenyl)benzimidazole
 CAS number(s) : 7621-86-5
 EC number : 231-538-6
 Molecular formula : C₁₃H₁₂N₄
 Structure :



3. Uses and Benefits

5-Amino-2-(4-aminophenyl)benzimidazole is a substituted benzimidazole compound with two amino groups one on the benzimidazole ring and another on the attached phenyl ring. This molecular scaffold is of interest primarily in medicinal chemistry and material science due to its structural features.

4. Physical / chemical properties

Property	Value
Physical state :	Solid
Colour :	Off-white light brown
Odour :	Odourless
pH :	NA
Melting point :	230 – 235 °C
Boiling point :	545.5 °C (1013.9 °F) at 760 mm Hg
Flash point :	317.6±19.0 °C (Predicted)
Density :	1.4±0.1 g/cm ³ (Predicted)
Solubility in Water:	No data available

GPS Safety Summary

5-Amino-2-(4-aminophenyl)benzimidazole

CL-4:PUBLIC

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	Harmful if swallowed
Irritation / corrosion Skin / eye/ respiratory tract	
Respiratory or skin sensitisation	NA
Toxicity after repeated exposure Oral / inhalation / dermal	NA
Genotoxicity / Mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	NA
Toxicity for reproduction	NA

6. Environmental Effects

Effect Assessment	Result
Aquatic toxicity	No
Fate and behavior	Result
Persistence and degradability	Not rapidly degradable
Bioaccumulative potential	No additional information available

7. Exposure

Human health

5-Amino-2-(4-aminophenyl)benzimidazole is a hazardous chemical that poses significant health risks upon exposure. It is: Harmful if swallowed indicating systemic toxicity when ingested. Suspected of causing genetic defects suggests potential mutagenicity, raising concerns about long-term genetic damage, including carcinogenic potential. The exposure must be kept as minimum as possible by the use of appropriate risk management measures suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers. Careless handling or accidental spillage of the chemical could result in exposure to potential hazardous levels of chemicals. Industrial workers should ensure that they follow the advice found in the extended safety data sheet (SDS).

Environment:

Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

GPS Safety Summary

5-Amino-2-(4-aminophenyl)benzimidazole

CL-4:PUBLIC

8. Risk Management Recommendations

Human health measures.

Organizational	A basic standard of occupational hygiene is recommended. Ensure operatives are well informed of the hazards and trained to minimise exposures. Ensure regular inspection and maintenance of equipment and machines. Handle and store according to the indications of the Safety Data Sheet.	
Protection	Eye protection:	Wear eye protection. Safety glasses
	Skin and body protection:	Wear suitable protective clothing
	Respiratory protection:	[In case of inadequate ventilation] wear respiratory protection.
Engineering controls	Ensure good ventilation of the work station.	
Environment protective measures		
Avoid release to the environment		

9. First-aid measures

First-aid measures after inhalation : Remove the person to fresh air and keep them comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution..

First-aid measures after ingestion : Rinse mouth. Call a poison center or a doctor if you feel unwell.

Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

Unsuitable extinguishing media :Do not use a heavy water stream.

Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be release

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions :Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.

GPS Safety Summary

5-Amino-2-(4-aminophenyl)benzimidazole

CL-4:PUBLIC

11. Accidental release measures

Protective equipment : safety goggles. protective gloves. Wear self-contained breathing apparatus and special tightly sealed suit.

Environmental precautions : Avoid release to the environment.

For containment : A Using a clean shovel, put the material in a dry container and cover without compressing it.

12. Disposal consideration

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Disposal must be done according to official regulations.

13. Handling and storage

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Obtain special instructions before use. Do not handle it until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

14. Classification and Labeling

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

Hazard statements (GHS US)

Precautionary statements (GHS US)

- : Warning
- : H302 - Harmful if swallowed
- : H341 - Suspected of causing genetic defects.
- : P201 - Obtain special instructions before use.
- : P202 - Do not handle until all safety precautions have been read and understood.
- : P264 - Wash hands, forearms and face thoroughly after handling.
- : P270 - Do not eat, drink or smoke when using this product.
- : P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.
- : P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
- : P308+P313 - If exposed or concerned: Get medical advice/attention.
- : P330 - Rinse mouth.
- : P405 - Store locked up.
- : P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

GPS Safety Summary

5-Amino-2-(4-aminophenyl)benzimidazole

CL-4:PUBLIC

15. Conclusion

5-Amino-2-(4-aminophenyl)benzimidazole is a chemically stable, off-white solid with limited solubility in water and low flammability. While its molecular structure makes it valuable in medicinal chemistry and materials science, it also presents significant occupational and environmental health hazards. It is harmful if swallowed, inhaled, or in contact with skin, indicating acute systemic toxicity. It is suspected of causing genetic defects likely due to the presence of aromatic amine groups, which are known for their mutagenic potential. Although not officially classified as carcinogenic, the mutagenicity raises long-term health concerns. It must be handled with strict safety and environmental protocols to mitigate its toxicological and mutagenic risks.

16. Contact Information within company

Manufacturer

Aarti Industries Limited

Udyog Kshetra, 2nd Floor, Mulund Goregaon Link Road, Mulund (West)

400080 Mumbai - India

T +91-22-6797-6666 - F +91-22-2565 3234

info@aarti-industries.com - www.aarti-industries.com

This GPS safety summary is intended to give general information about the health, safety and environment and not intended to provide in-depth details. To obtain the most accurate and current information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.