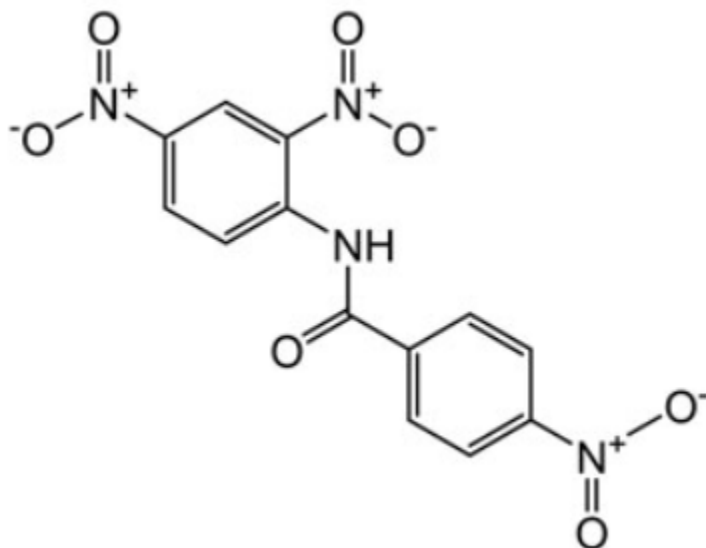


1. General Statements

N-(2,4-dinitrophenyl)-4-nitrobenzamide is a crystalline solid due to the presence of nitro groups (which often impart yellow color). It is sparingly soluble in water, more soluble in organic solvents like DMSO, DMF, or acetone. The nitro groups make it electron-deficient, affecting reactivity, especially in nucleophilic aromatic substitution.

2. Chemical identification.

Name : N-(2,4-dinitrophenyl)-4-nitrobenzamide
CAS number(s) : 37632-91-0
EC number : Not Available
Molecular formula : C₁₃H₈N₄O₇
Structure :



3. Uses and Benefits

It is commonly used as biochemical assays — for example, as reagents for detecting amino acids or proteins (like the 2,4-dinitrophenylhydrazine (DNPH) reagent). It potentially can be used in organic synthesis as intermediates. Nitro-substituted amides sometimes have applications in materials science or as explosives intermediates, though this specific compound is more likely used in analytical or research chemistry.

4. Physical / chemical properties

Property	Value
Physical state :	Solid
Colour :	Yellow

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Odour :	Odourless
pH :	NA
Melting point :	191 to 195 °C
Boiling point :	464.6 ± 45.0 °C
Flash point :	234.8±28.7 °C (Predicted)
Density :	1.629 ± 0.06 g/cm ³
Solubility in Water:	NDA.

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	NA
Irritation / corrosion Skin / eye/ respiratory tract	NA
Respiratory or skin sensitisation	NA
Toxicity after repeated exposure Oral / inhalation / dermal	NA
Genotoxicity / Mutagenicity	May cause genetic defects. Causes damage to organs.
Carcinogenicity	It may cause cancer.
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

N-(2,4-dinitrophenyl)-4-nitrobenzamide is a chemical compound that poses serious health risks. It may cause genetic defects (mutagenic effects), damage to organs, and has the potential to cause cancer(carcinogenicity). Due to these hazards, it must be handled with extreme caution, following strict safety protocols to minimize exposure and protect human health..The exposure must be kept as minimum as possible by the use of

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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 potentially 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.

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:	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 : 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.

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Special hazards arising from the substance or mixture

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

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 : Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

11. Accidental release measures

Protective equipment : suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Environmental precautions : Avoid release to the environment. Notify authorities if a product enters sewers or public waters.

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Provide equipment/receptacles with earthing. Knock down/dilute dust clouds with water spray. Take account of toxic/corrosive precipitation water. powered form no compressed air for pumping over spills.

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. Obtain special instructions before use. Do not handle it until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product in the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapors/spray.

Hygiene measures : Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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14. Classification and Labeling

Hazard pictograms (GHS US)

:



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H340 - May cause genetic defects.

H350 - May cause cancer.

H370 - Causes damage to organs.

Precautionary statements (GHS US)

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust, fume, gas, mist, spray, vapors.

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 and face protection.

P308+P311 - If exposed or concerned: Call a poison center or doctor.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P321 - Specific treatment (see supplemental first aid instruction on this label).

P405 - Store locked up.

P501 - Dispose of hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

15. Conclusion

N-(2,4-dinitrophenyl)-4-nitrobenzamide is a yellow crystalline solid with limited water solubility and enhanced solubility in organic solvents due to its nitro groups. Its chemical structure renders it electron-deficient, influencing its chemical reactivity. This compound is primarily used in biochemical assays and organic synthesis, although it carries significant health risks. It may cause genetic defects, organ damage, and cancer, making it a hazardous substance that requires strict safety precautions. Due to its toxicity and potential environmental impact, careful handling, storage, and disposal procedures are essential. Protective equipment, good industrial hygiene, and adequate ventilation must be ensured to minimize exposure. In case of accidental release or exposure, immediate and appropriate first-aid and containment measures should be taken. The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

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

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information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.