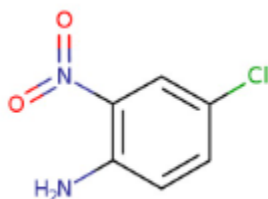


1. General Statements

4-Chloro-2-nitroaniline is powder solid orange in colour. It is a Combustible substance, poorly flammable. Practically insoluble in water. Chemically unstable at increased temperature. Acute or chronic health hazards result from the substance. The substance is hazardous to the aquatic environment.

2. Chemical identification.

Name : 4-Chloro-2-nitroaniline
 CAS number(s) : 89-63-4
 EC number : 201-925-4
 Molecular formula : C₆H₅ClN₂O₂
 Structure :



3. Uses and Benefits

It is used as an Intermediate in the manufacture of dyes.

4. Physical / chemical properties

Property	Value
Physical state :	Solid
Colour :	Yellow-orange
Odour :	Aromatic odour
pH :	NA
Melting point :	116 °C
Boiling point :	The substance decomposes when heated
Flash point :	191 °C (1013 hPa)
Density :	1370 kg/m ³
Solubility in Water:	0.014 g/100ml

GPS Safety Summary

4-Chloro-2-nitroaniline

CL-4:PUBLIC

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	Fatal if swallowed, in contact with skin or if inhaled
Irritation / corrosion Skin / eye/ respiratory tract	NA
Respiratory or skin sensitisation	NA
Toxicity after repeated exposure Oral / inhalation / dermal	May cause damage to organs through prolonged or repeated exposure
Genotoxicity / Mutagenicity	NA
Carcinogenicity	NA
Toxicity for reproduction	NA

6. Environmental Effects

Effect Assessment	Result
Aquatic toxicity	Yes
Fate and behavior	Result
Persistence and degradability	Not readily biodegradable in water.
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

7. Exposure

Human health

4-Chloro-2-nitroaniline is fatal if swallowed, is fatal in contact with skin, is fatal if inhaled, is toxic to aquatic life with long lasting effects and may cause damage to organs through prolonged or repeated exposure. 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 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.

GPS Safety Summary

4-Chloro-2-nitroaniline

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:	Face shield (EN 166). In case of dust production: protective goggles (EN 166)
	Skin and body protection:	Protective clothing (EN 14605 or EN 13034). In case of dust production: head/neck protection. In case of dust production: dustproof clothing (EN 13982)
	Respiratory protection:	Dust production: dust mask with filter type P3. Combined gas/dust mask with filter type A/P3. On heating: Full face mask with filter type A
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 victim into fresh air. Immediately consult a doctor/medical service.

First-aid measures after skin contact: Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. Remove clothing before washing. Take the victim to a doctor if irritation persists.

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice.

First-aid measures after ingestion : Rinse mouth with water. Give nothing to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre(www.big.be/antigif.html). Immediately consult a doctor/medical service. Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital.

GPS Safety Summary

4-Chloro-2-nitroaniline

CL-4:PUBLIC

10. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.

Unsuitable extinguishing media : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire: On heating/burning: release of toxic and corrosive gases/vapours (hydrogen chloride, nitrous vapours, phosgene, carbon monoxide - carbon dioxide).

Advice for firefighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. 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 : Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Dust cloud production: dust-tight suit (EN 13982). Reactivity hazard: self-contained breathing apparatus (EN 136 + EN 137). Reactivity hazard: gas-tight suit (EN 943).

Environmental precautions: Prevent soil and water pollution. Prevent spreading in sewers.

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. If reacting: dilute toxic gas/vapour with water spray. Knock down/dilute dust cloud with water spray. Take account of toxic/corrosive precipitation water. Provide equipment/receptacles with earthing. Powdered 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.

GPS Safety Summary

4-Chloro-2-nitroaniline

CL-4:PUBLC

13. Handling and storage

Precautions for safe handling: Avoid raising dust. Take precautions against electrostatic charges. Keep away from naked flames/heat. In a finely divided state: use spark-/explosion proof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Powdered form: no compressed air for pumping over. Keep the container tightly closed.

Hygiene measures :Observe very strict hygiene - avoid contact.

14. Classification and Labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US)

: P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P301+P310 - If swallowed: Immediately call a poison center or doctor.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P310 - Immediately call a poison center or doctor.
P314 - Get medical advice/attention if you feel unwell.
P320 - Specific treatment is urgent (see supplemental first aid instruction on this label).
P321 - Specific treatment (see supplemental first aid instruction on this label).
P322 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

GPS Safety Summary

4-Chloro-2-nitroaniline

CL-4:PUBLIC

15. Conclusion

4-Chloro-2-nitroaniline is powder solid orange in colour. It is Combustible substance, poorly flammable. Practically insoluble in water. Chemically unstable at increased temperature. Acute or chronic health hazards result from the substance. The substance is hazardous to the aquatic environment. Unstable substance, explosive decomposition possible. Risk of explosion in contact with: alkali metals, sodium, nitric acid, liquid oxygen. The substance can react dangerously with: bases, aluminium (powder), oxidizing agents, strong acids. Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. 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 information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.