

1 Identification of substance**Product details**

Trade name 2-Amino-5-chlorobenzonitrile
Stock number: B22690
Manufacturer/Supplier: Alfa Aesar GmbH & Co.KG
 Benzstrasse 3
 D-76185 Karlsruhe / Germany

E-mail: gcat@matthey.com
 www.alfa-chemcat.com

Informing department: Product safety department.
Emergency information: Giftnotruf Universität Mainz / Poison Information Center Mainz
 www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240

2 Hazards identification**Hazard designation:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 R 36/37/38 Irritating to eyes, respiratory system and skin.

GHS label elements**Danger**

H301 - Toxic if swallowed.
 H311 - Toxic in contact with skin.

Warning

H332 - Harmful if inhaled.
 H315 - Causes skin irritation.
 H319 - Causes serious eye irritation.
 H335 - May cause respiratory irritation.

Response:

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P361 Remove/Take off immediately all contaminated clothing.

Storage: P405 Store locked up.
Disposal: P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients**Chemical characterization:**

Designation: (CAS#) 2-Amino-5-chlorobenzonitrile (CAS# 5922-60-1)
Identification number(s):
EINECS Number: 227-651-5

4 First aid measures**General information**

Instantly remove any clothing soiled by the product.

After inhalation

In case of irregular breathing or respiratory arrest provide artificial respiration.
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.
 Instantly wash with water and soap and rinse thoroughly.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Do not induce vomiting; instantly call for medical help.
 Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.**Special hazards caused by the material, its products of combustion or flue gases:**

Can be released in case of fire:
 Carbon monoxide and carbon dioxide
 Nitrogen oxides (NO_x)
 Hydrogen chloride (HCl)
 Hydrogen cyanide (HCN)
 Wear self-contained breathing apparatus.
 Wear full protective suit.

Protective equipment:**6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Measures for cleaning/collecting:

Do not allow material to be released to the environment without proper governmental permits.
 Dispose of contaminated material as waste according to item 13.

Additional information:

Ensure adequate ventilation.
 See Section 7 for information on safe handling
 See section 8 for information on personal protection equipment.
 See Section 13 for information on disposal.

7 Handling and storage**Handling****Information for safe handling:**

Keep containers tightly sealed.
 Store in cool, dry place in tightly closed containers.
 Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Storage Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.
 Store in a locked cabinet or with access restricted to technical experts or their assistants.

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8 Exposure controls and personal protection

Additional information about design of technical systems:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Components with critical values that require monitoring at the workplace:	Not required.
Additional information:	No data
Personal protective equipment	The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Avoid contact with the eyes and skin. Use breathing protection with high concentrations. Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
General protective and hygienic measures	
Breathing equipment:	
Protection of hands:	
Material of gloves	Impervious gloves
Penetration time of glove material	Not determined
Eye protection:	Safety glasses
Body protection:	Face protection Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline
Colour:	White
Smell:	Not determined

Change in condition	
Melting point/Melting range:	94-97°C
Boiling point/Boiling range:	132-135°C (0.5 mmHg)
Sublimation temperature / start:	Not determined

Flash point: Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product is not explosive.

Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined

Steam pressure: Not determined**Density** Not determined**Solubility in / Miscibility with Water:** Insoluble**10 Stability and reactivity**

Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
Materials to be avoided:	Oxidizing agents
Dangerous reactions:	No dangerous reactions known
Dangerous products of decomposition:	Carbon monoxide and carbon dioxide Nitrogen oxides (NO _x) Hydrogen chloride (HCl) Hydrogen cyanide (prussic acid)

11 Toxicological information

Acute toxicity:	
Primary irritant effect:	
on the skin:	Irritant for skin and mucous membranes.
on the eye:	Irritant effect.
Sensitization:	No sensitizing effect known.
Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Danger by skin resorption. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Additional ecological information:	
General notes:	Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:	
Recommendation	Consult state, local or national regulations for proper disposal. Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations.
Uncleaned packagings:	
Recommendation:	Disposal must be made according to official regulations.

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14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class: 6.1 (T2) Toxic substances.
Kemler Number: 60
UN-Number: 3439
Packaging group: III
Label: 6.1
Designation of goods: 3439 NITRILES, TOXIC, SOLID, N.O.S. (2-Amino-5-chlorobenzonitrile)
Limited quantities (LQ): LQ9
Transport category: 2
Tunnel restriction code: E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 6.1
UN Number: 3439
Label: 6.1
Packaging group: III
Marine pollutant: No
Correct technical name: NITRILES, TOXIC, SOLID, N.O.S. (2-Amino-5-chlorobenzonitrile)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 3439
Label: 6.1
Packaging group: III
Correct technical name: NITRILES, TOXIC, SOLID, N.O.S. (2-Amino-5-chlorobenzonitrile)

UN "Model Regulation":

UN3439, NITRILES, TOXIC, SOLID, N.O.S., 6.1, III

15 Regulatory information**Designation according to EC guidelines:****Code letter and hazard designation of product:**

Xn Harmful

Risk phrases:20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.**Safety phrases:**26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37 Wear suitable protective clothing and gloves.**National regulations****Information about limitation of use:**Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.**Contact:** Zachariah Holt**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)