

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description: **4-Amino-3,5-dichlorobenzonitrile**
Cat No. : **L09852**
CAS No **78473-00-4**
Molecular Formula **C7 H4 Cl2 N2**

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Importer

Fisher Scientific Korea
D5,D6, Incheon Airport Logistics Complex
150, Gonghangdong-Ro 296 Beon-Gil
Jung-Gu, Incheon
Tel: +82-1661-9555
Fax: +82-2-2023-0603

Supplier

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099

E-mail address Chem.KR@thermofisher.com

Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970
CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887
Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

Label Elements

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Other Hazards

May form explosible dust-air mixture if dispersed
This product does not contain any known or suspected endocrine disruptors

NFPA

Health
0

Flammability
0

Instability
0

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
4-Amino-3,5-dichlorobenzonitrile	No information available	78473-00-4	Not listed	99 - 100

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Self-Protection of the First Aider

No special precautions required.

Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO₂). Dry chemical. Chemical foam.

Extinguishing media which must not be used for safety reasons

No information available.

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Special hazards arising from the substance or mixture

Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride gas.

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

Conditions for Safe Storage, Including any Incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed	Not listed	Not listed

Component	CAS No	European Union	The United Kingdom	Germany
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed	Not listed	Not listed

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed

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Exposure Controls

Engineering Measures

None under normal use conditions.

Personal protective equipment

Eye Protection

Wear safety glasses with side shields (or goggles)

Hand Protection

Protective gloves

Skin and body protection

Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Personal protective equipment

Use only those certified by the Korea Occupational Safety and Health Administration.

Respiratory Protection

No protective equipment is needed under normal use conditions

Recommended Filter type:

Particle filter

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) Off-white Powder Solid

Odor No information available

Odor Threshold No data available

pH No information available

Melting Point/Range 116 - 120 °C / 240.8 - 248 °F

Softening Point No data available

Boiling Point/Range No information available

Flash Point No information available

Method - No information available

Evaporation Rate Not applicable

Solid

Flammability (solid,gas) No information available

Explosion Limits No data available

Vapor Pressure No data available

Vapor Density Not applicable

Solid

Specific Gravity / Density No data available

Bulk Density No data available

Water Solubility No information available

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Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available

Autoignition Temperature	Not applicable	
Decomposition Temperature	No data available	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	C7 H4 Cl2 N2
Molecular Weight	187.02

SECTION 10: STABILITY AND REACTIVITY

Reactivity None known, based on information available

Chemical Stability Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents.

Hazardous Decomposition Products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information No acute toxicity information is available for this product

Information on expected route of exposure

Inhalation	Avoid breathing dust or spray mist.
Ingestion	No known effect based on information supplied.
Eyes	Not an expected route of exposure.
Skin	No known effect based on information supplied.

Information on Health Hazards .

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(a) acute toxicity;

Oral No data available
Dermal No data available
Inhalation No data available

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

Component	CAS No	Test method	Test species	Study result
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects

No information available.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

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SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Do not empty into drains.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	No data available	No data available	No data available	No data available

Persistence and degradability No information available

Bioaccumulative potential No information available

Mobility in soil No information available

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN3439
Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
Technical Shipping Name 4-Amino-3,5-dichlorobenzonitrile
Hazard Class 6.1
Packing Group III

IATA

UN-No UN3439
Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
Technical Shipping Name 4-Amino-3,5-dichlorobenzonitrile
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN3439
Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
Technical Shipping Name 4-Amino-3,5-dichlorobenzonitrile
Hazard Class 6.1
Packing Group III
Marine Pollutant No hazards identified

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Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Legend: X - Listed '-' - Not Listed

International Inventories

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	-	-	278-914-6	-	-	-	-	-	-	-

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

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Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not listed	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable

CERCLA Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
4-Amino-3,5-dichlorobenzonitrile	78473-00-4	Not applicable	Not applicable	Not applicable

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Based on available data, the classification criteria are not met.

May form combustible dust concentrations in air.

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

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ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Prepared By	Health, Safety and Environmental Department
Creation Date	15-Apr-2015
Revision Date	10-Jun-2024
Revision Number	6
Revision Summary	New emergency telephone response service provider.

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of Safety Data Sheet