

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

Product Identifier

Product Description: tert-Pentylamine
Cat No. : **B24639**
Synonyms 1,1-Dimethylpropylamine
CAS No 594-39-8
Molecular Formula C5 H13 N

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
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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

Flammable liquids Category 2

Health hazards

Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1

Environmental hazards

Based on available data, the classification criteria are not met

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Label Elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H314 - Causes severe skin burns and eye damage

H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled

H318 - Causes serious eye damage

Precautionary Statements

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P233 - Keep container tightly closed

P240 - Ground and bond container and receiving equipment

P241 - Use explosion-proof electrical/ ventilating/ lighting equipment

P242 - Use non-sparking tools

P243 - Take action to prevent static discharges

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P264 - Wash hands and face thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P330 - Rinse mouth

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P312 - Call a POISON CENTER or doctor if you feel unwell

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

P322 - Specific measures (see supplemental first aid instructions on this label)

P362 + P364 - Take off contaminated clothing and wash it before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P363 - Wash contaminated clothing before reuse

P310 - Immediately call a POISON CENTER or doctor

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool

P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

This product does not contain any known or suspected endocrine disruptors

NFPA

ALFAAB24639

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Health
3

Flammability
3

Instability
0

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
tert-Amylamine	1,1-Dimethylpropylamine	594-39-8	KE-28063	99 - 100

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Eye Contact

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

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Ingestion

Do NOT induce vomiting. Call a physician immediately. Clean mouth with water.

Inhalation

Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

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

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Flammable.

Hazardous Combustion Products

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

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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.

Environmental precautions

See Section 12 for additional Ecological Information.

Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe dust. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools.

Conditions for Safe Storage, Including any Incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Corrosives area. Flammables area.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
tert-Amylamine	594-39-8	Not listed	Not listed	Not listed

Component	CAS No	European Union	The United Kingdom	Germany
tert-Amylamine	594-39-8	Not listed	Not listed	Not listed

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
tert-Amylamine	594-39-8	Not listed

Exposure Controls

Engineering Measures

Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

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Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection	Goggles
Hand Protection	Protective gloves
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure

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	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly When RPE is used a face piece Fit Test should be conducted

<u>Hygiene Measures</u>	Handle in accordance with good industrial hygiene and safety practice
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<u>Environmental exposure controls</u>	No information available
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.)	Colorless Liquid
Odor	Odorless
Odor Threshold	No data available
pH	No information available
Melting Point/Range	No data available
Softening Point	No data available
Boiling Point/Range	77 °C / 170.6 °F @ 760 mmHg
Flash Point	-1 °C / 30.2 °F Method - No information available
Evaporation Rate	No data available
Flammability (solid,gas)	No information available
Explosion Limits	No data available
Vapor Pressure	No data available
Vapor Density	No data available (Air = 1.0)
Specific Gravity / Density	0.746
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
tert-Amylamine	594-39-8	No data available

Autoignition Temperature No data available
Decomposition Temperature No data available
Viscosity No data available
Explosive Properties No information available
Oxidizing Properties No information available

Molecular Formula C5 H13 N
Molecular Weight 87.15

SECTION 10: STABILITY AND REACTIVITY

Reactivity None known, based on information available

Chemical Stability Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization No information available.
Hazardous Reactions No information available.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

Incompatible Materials Acids. Strong oxidizing agents. Acid anhydrides. Acid chlorides. Carbon dioxide (CO₂).

Hazardous Decomposition Products

Nitrogen oxides (NO_x). Carbon monoxide (CO). Carbon dioxide (CO₂).

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 Not an expected route of exposure.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin Avoid contact with skin. Causes burns. Skin Corrosion/Irritation. Harmful in contact with skin.

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Information on Health Hazards

(a) acute toxicity;

Oral	Category 4
Dermal	Category 4
Inhalation	Category 4

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
tert-Amylamine	594-39-8	No data available	No data available	No data available

(b) skin corrosion/irritation; Category 1

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory	No data available
Skin	No data available

Component	CAS No	Test method	Test species	Study result
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	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; No data available

Other Adverse Effects

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information

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tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable
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SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	Not listed

Other adverse effects

No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

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 UN1106
Proper Shipping Name AMYLAMINE
Hazard Class 3
Subsidiary Hazard Class 8
Packing Group II

IATA

UN-No UN1106
Proper Shipping Name AMYLAMINE
Hazard Class 3
Subsidiary Hazard Class 8
Packing Group II

IMDG/IMO

UN-No UN1106
Proper Shipping Name AMYLAMINE
Hazard Class 3
Subsidiary Hazard Class 8
Packing Group II
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
tert-Amylamine	594-39-8	KE-28063	X	209-839-9	-	-	X	-	X	X	-

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)
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	Annex 1 - KE-28063	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
tert-Amylamine	594-39-8	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)
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
tert-Amylamine	594-39-8	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
tert-Amylamine	594-39-8	5000 kg	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
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable	2. Group 1 Petroleum (Insoluble) 200 L	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
tert-Amylamine	594-39-8	Not listed	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration
Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
tert-Amylamine	594-39-8	Not applicable	Not applicable

CERCLA Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
tert-Amylamine	594-39-8	Not applicable	Not applicable	Not applicable

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

Danger.

H225 - Highly flammable liquid and vapor. H314 - Causes severe skin burns and eye damage. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P280 - Wear eye protection/ face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P240 - Ground and bond container and receiving equipment. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

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

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

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

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KECL - Korean Existing and Evaluated 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%

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

08-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