



SAFETY DATA SHEET

Creation Date 23-Mar-2012

Revision Date 17-Oct-2013

Revision Number 4

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

1.1. Product identification

Product Description:	<u>Allylamine</u>
Cat No. :	220730000; 220730010; 220730500; 220732500
Synonyms	3-Amino-1-propene
CAS-No	107-11-9
EC-No.	203-463-9
Molecular Formula	C3 H7 N

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company	Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium
E-mail address	begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable liquids	Category 2 (H225)
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Health hazards

Acute oral toxicity	Category 3 (H301)
Acute dermal toxicity	Category 1 (H310)
Acute Inhalation Toxicity - Vapors	Category 1 (H330)
Skin Corrosion/Irritation	Category 1 A (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)

Environmental hazards

Based on available data, the classification criteria are not met

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor
H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H330 - Fatal if inhaled
H314 - Causes severe skin burns and eye damage
EUH071 - Corrosive to the respiratory tract

Precautionary Statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P310 - Immediately call a POISON CENTER or doctor/ physician
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
P260 - Do not breathe dust/fume/gas/mist/vapors/spray

2.3. Other hazards

Lachrymator (substance which increases the flow of tears)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Allylamine	107-11-9	EEC No. 203-463-9	>95	Acute Tox. 3 (H301) Acute Tox. 1 (H310) Acute Tox. 1 (H330) Skin Corr. 1A (H314) Eye Dam. 1 (H318) Flam. Liq. 2 (H225) EUH071

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

ACR22073

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

4.1. Description of first aid measures

General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Inhalation	Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Move to fresh air. Immediate medical attention is required. If not breathing, give artificial respiration.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Breathing difficulties. 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrocarbons, Amines, Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACR22073

Page 3 / 11

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Wear personal protective equipment. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat and sources of ignition. Flammables area.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s):

Component	Austria	Denmark	Switzerland	Poland	Norway
Allylamine	Haut MAK-KZW: 6 ppm 15 Minuten MAK-KZW: 14 mg/m ³ 15 Minuten MAK-TMW: 2 ppm 8 Stunden	TWA: 2 ppm 8 timer TWA: 4.7 mg/m ³ 8 timer Hud			TWA: 2 ppm 8 timer TWA: 5 mg/m ³ 8 timer STEL: 4 ppm 15 minutter. value calculated STEL: 10 mg/m ³ 15 minutter. value

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

	MAK-TMW: 5 mg/m ³ 8 Stunden				calculated
Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Allylamine		kože TWA-GVI: 5 mg/m ³ 8 satima.			
Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Allylamine	Nahk TWA: 2 ppm 8 tundides. TWA: 5 mg/m ³ 8 tundides. STEL: 6 ppm 15 minutites. STEL: 14 mg/m ³ 15 minutites.				TWA: 2 ppm 8 klukkustundum. TWA: 5 mg/m ³ 8 klukkustundum. Skin notation Ceiling: 4 ppm Ceiling: 10 mg/m ³
Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Allylamine		TWA: 2 ppm IPRD TWA: 5 mg/m ³ IPRD Oda STEL: 6 ppm STEL: 14 mg/m ³			TWA: 0.1 mg/m ³ 8 ore STEL: 0.4 mg/m ³ 15 minute
Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Allylamine	Skin notation MAC: 0.5 mg/m ³		TWA: 5 mg/m ³ 8 urah Koža	Indicative STLV: 6 ppm 15 minuter Indicative STLV: 14 mg/m ³ 15 minuter LLV: 2 ppm 8 timmar. LLV: 5 mg/m ³ 8 timmar. Hud	

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) No information available

<u>Route of exposure</u>	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

ACR22073

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

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 (European standard - EN 166)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene	See manufacturers recommendations	-	EN 374	(minimum requirement)

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.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Inorganic gases and vapours filter Type B Grey Ammonia and organic ammonia derivatives filter Type K Green

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

No information available

Physical State

Liquid

Odor

Ammonia-like

Odor Threshold

No data available

pH

11.2

5.7 g/l aq.sol

Melting Point/Range

-88 °C / -126.4 °F

Softening Point

No data available

Boiling Point/Range

53 - 58 °C / 127.4 - 136.4 °F

Flash Point

-28 °C / -18.4 °F

Method - No information available

Evaporation Rate

No data available

Flammability (solid,gas)

Not applicable

Liquid

ACR22073

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

Explosion Limits	Lower 2.2 Upper 22	
Vapor Pressure	257 mbar @ 20 °C	
Vapor Density	1.97	(Air = 1.0)
Specific Gravity / Density	0.763	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Allylamine	0.15	
Autoignition Temperature	370 - °C / 698 - °F	
Decomposition Temperature	No data available	
Viscosity	0.44 cP at 25 °C	
Explosive Properties	No information available	Vapors may form explosive mixtures with air
Oxidizing Properties	No information available	

9.2. Other information

Molecular Formula	C3 H7 N
Molecular Weight	57.09

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Excess heat. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Acids. Strong oxidizing agents. Chlorine. Organic materials. Peroxides. Acid anhydrides. Acid chlorides. Metals. copper. Carbon dioxide (CO₂). halogenated agents. Butyl rubber. Powdered metals.

10.6. Hazardous decomposition products

Nitrogen oxides (NO_x). Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrocarbons. Amines. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity; Oral	Category 3
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SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

Dermal Inhalation	Category 1 Category 1		
Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Allylamine	LD50 = 102 mg/kg (Rat)	LD50 = 35 mg/kg (Rabbit)	LC50 = 177 ppm (Rat) 8 h

- (b) skin corrosion/irritation; Category 1 A
- (c) serious eye damage/irritation; Category 1
- (d) respiratory or skin sensitization;
 Respiratory No data available
 Skin No data available
- (e) germ cell mutagenicity; No data available
 Not mutagenic in AMES Test
- (f) carcinogenicity; No data available
 There are no known carcinogenic chemicals in this product
- (g) reproductive toxicity; No data available
- (h) STOT-single exposure; No data available
- (i) STOT-repeated exposure; No data available
 Target Organs None known.
- (j) aspiration hazard; No data available
- Symptoms / effects, both acute and delayed** 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

The product contains following substances which are hazardous for the environment. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Allylamine				EC50 = 16.3 mg/L 15 min EC50 = 19.9 mg/L 5 min

12.2. Persistence and degradability

Persistence

Degradation in sewage treatment plant

Expected to be biodegradable

Persistence is unlikely, based on information available.

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Allylamine	0.15	No data available

12.4. Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Other adverse effects
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN2334
14.2. UN proper shipping name ALLYLAMINE
14.3. Transport hazard class(es) 6.1
Subsidiary Hazard Class 3
14.4. Packing group I

ADR

14.1. UN number UN2334
14.2. UN proper shipping name ALLYLAMINE
14.3. Transport hazard class(es) 6.1
Subsidiary Hazard Class 3
14.4. Packing group I

IATA

14.1. UN number UN2334
14.2. UN proper shipping name ALLYLAMINE, FORBIDDEN FOR IATA TRANSPORT

ACR22073

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

14.3. Transport hazard class(es) 6.1
Subsidiary Hazard Class 3
14.4. Packing group I

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Allylamine	203-463-9	-		X	X	-	X	X	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Allylamine	WGK 2	

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H225 - Highly flammable liquid and vapor
H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H330 - Fatal if inhaled
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
EUH071 - Corrosive to the respiratory tract

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/NDSL - 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

DNEL - Derived No Effect Level

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

ACR22073

SAFETY DATA SHEET

Allylamine

Revision Date 17-Oct-2013

RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

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 Compounds

Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical incident response training.

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Revision Summary	Update to Format.

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