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MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1. Product identifiers

Product name: Allylamine, 99% Product Code: A 1654 CAS No : 107-11-9 1.2. Relevant identified uses of the substance or mixture and uses advised against Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet
Company identification
OTTO CHEMIE PVT LTD
101, Aarkay Ruby Industrial Estate(1B), Opp Shree Narayan Industrial Estate,
Chinchpada, Vasai East, Waliv, Maharashtra 401208.
Email <u>info@ottokemi.com</u>

1.4. Emergency telephone number Phone no. : + 91 22 2207 0099 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 Flammable liquids (Category 2), H225 Acute toxicity, Oral (Category 3), H301 Acute toxicity, Inhalation (Category 1), H330 Acute toxicity, Dermal (Category 1), H310 Skin corrosion (Sub-category 1A), H314 Serious eye damage (Category 1), H318 For the full text of the H-Statements mentioned in this Section, see Section 16. 2.2 Label elements Labelling according Regulation (EC) No 1272/2008 Pictogram Signal word Danger Hazard statement(s) H225 Highly flammable liquid and vapor. H301 Toxic if swallowed. H310 + H330 Fatal in contact with skin or if inhaled. H314 Causes severe skin burns and eye damage. Precautionary statement(s) P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ 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. Supplemental Hazard Statements none Reduced Labeling (<= 125 ml) Pictogram Signal word Danger Hazard statement(s) H301 Toxic if swallowed. H314 Causes severe skin burns and eye damage.

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H310 + H330 Fatal in contact with skin or if inhaled. Precautionary statement(s) P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ 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. Supplemental Hazard Statements none 2.3 Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. **SECTION 3: Composition/information on ingredients** 3.1 Substances Formula : C3H7N Molecular weight : 58,09 g/mol Component Classification Concentration Allylamine, 99% Flam. Liq. 2; Acute Tox. 3; <= 100 % Acute Tox. 1; Skin Corr. 1A; Eye Dam. 1; H225,

H301, H330, H310, H314,

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

H318

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact; Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eve contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Remove contact lenses.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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Foam Carbon dioxide (CO2) Dry powder Unsuitable extinguishing media For this substance/mixture no limitations of extinguishing agents are given. 5.2 Special hazards arising from the substance or mixture Carbon oxides Nitrogen oxides (NOx) Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures. 5.3 Advice for firefighters Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. 5.4 Further information Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system. **SECTION 6: Accidental release measures** 6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8. 6.2 Environmental precautions Do not let product enter drains. Risk of explosion. 6.3 Methods and materials for containment and cleaning up Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. 6.4 Reference to other sections For disposal see section 13. **SECTION 7: Handling and storage** 7.1 Precautions for safe handling Advice on safe handling Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Advice on protection against fire and explosion Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Hygiene measures Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons. Storage stability Recommended storage temperature 15 - 25 °C Hygroscopic. Store under inert gas. 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated **SECTION 8: Exposure controls/personal protection** 8.1 Control parameters

Ingredients with workplace control parameters 8.2 Exposure controls

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Personal protective equipment Eye/face protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles Skin protection required . Body Protection Flame retardant antistatic protective clothing. Respiratory protection required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. Control of environmental exposure Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties a) Appearance Form: b) Odor c) Odor Threshold d) pH e) Melting point/freezing point f) Initial boiling point and boiling range g) Flash point h) Evaporation rate i) Flammability (solid,gas) i) Upper/lower flammability or explosive limits Upper explosion limit: 22 %(V) Lower explosion limit: 2,2 %(V) k) Vapor pressure I) Vapor density m) Relative density n) Water solubility o) Partition coefficient: n-octanol/water p) Autoignition temperature q) Decomposition temperature r) Viscosity Viscosity, kinematic: Viscosity, dynamic: s) Explosive properties t) Oxidizing properties 9.2 Other safety information No data available

Liquid No data available No data available No data available

No data available

No data available 20 °C - closed cup No data available No data available

No data available No data available No data available No data available

No data available 373,9 °C at 1.013 hPa

No data available No data available No data available No data available No data available

SECTION 10: Stability and reactivity

10.1 Reactivity Vapors may form explosive mixture with air. 10.2 Chemical stability The product is chemically stable under standard ambient conditions (room temperature).

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10.3 Possibility of hazardous reactions No data available 10.4 Conditions to avoid Warming. 10.5 Incompatible materials acids, Oxidizing agents, Chlorine, Hypochlorites, Halogens, Chemically active metals 10.6 Hazardous decomposition products In the event of fire: see section 5 **SECTION 11: Toxicological information** 11.1 Information on toxicological effects Acute toxicity LD50 Oral - Rat - male - 106 mg/kg (OECD Test Guideline 401) Remarks: The value is given in analogy to the following substances: allylamine Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Acute toxicity estimate Inhalation - 4 h - 0.1 mg/l (Expert judgment) Remarks: The value is given in analogy to the following substances: allylamine LD50 Dermal - Rabbit - male - 35 mg/kg (OECD Test Guideline 402) Remarks: The value is given in analogy to the following substances: allylamine Skin corrosion/irritation Skin - reconstructed human epidermis (RhE) Result: Causes severe burns. - 3 - 60 min (OECD Test Guideline 431) Remarks: The value is given in analogy to the following substances: allylamine Serious eye damage/eye irritation Causes serious eye damage. (in analogy to similar products) Respiratory or skin sensitization No data available Germ cell mutagenicity Ames test S. typhimurium Result: negative Remarks: The value is given in analogy to the following substances: allylamine In vitro mammalian cell gene mutation test mouse lymphoma cells Result: negative Remarks: The value is given in analogy to the following substances: allylamine Chromosome aberration test in vitro Human lymphocytes Result: positive Remarks: The value is given in analogy to the following substances: allylamine **OECD** Test Guideline 474 Mouse - male - Red blood cells (erythrocytes) Result: negative Remarks: The value is given in analogy to the following substances: allylamine Carcinogenicity IARC: No ingredient of this product present at levels greater than or equal to 0.1% isidentified as probable, possible or confirmed human carcinogen by IARC. Reproductive toxicity

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No data available Specific target organ toxicity - single exposure No data available Acute oral toxicity - Irritations of mucous membranes in the mouth, pharvnx, oesophagus and gastrointestinal tract. Specific target organ toxicity - repeated exposure No data available Aspiration hazard No data available 11.2 Additional Information Not available Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Handle in accordance with good industrial hygiene and safety practice. The value is given in analogy to the following substances: allylamine Systemic effects: The value is given in analogy to the following substances: allylamine Cyanosis Convulsions Unconsciousness The value is given in analogy to the following substances: allylamine Damage to: The value is given in analogy to the following substances: allylamine Liver Kidnev The value is given in analogy to the following substances: allylamine Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments. The value is given in analogy to the following substances: allylamine Other dangerous properties can not be excluded. The value is given in analogy to the following substances: allylamine **SECTION 12: Ecological information** 12.1 Toxicity Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 7,65 mg/l - 96 h (OECD Test Guideline 203) Remarks: The value is given in analogy to the following substances: allylamine Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 28,9 mg/l - 48 h (OECD Test Guideline 202) Remarks: The value is given in analogy to the following substances: allylamine Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) -22,31 mg/l - 72 h (OECD Test Guideline 201) Remarks: The value is given in analogy to the following substances: allvlamine 12.2 Persistence and degradability No data available 12.3 Bioaccumulative potential No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent,

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bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. 12.6 Other adverse effects No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number		
ADR/RID: 2334	IMDG: 2334	IATA: 2334
14.2 UN proper shipping nar	ne	
ADR/RID: ALLYLAMINE		
IMDG: ALLYLAMINE		
IATA: Allylamine		
Passenger Aircraft: Not permitted for transport		
Cargo Aircraft: Not permitted		
14.3 Transport hazard class	(es)	
ADR/RID: 6.1 (3)	IMDG: 6.1 (3)	IATA: 6.1 (3)
14.4 Packaging group		
ADR/RID: I	IMDG: I	IATA: -
14.5 Environmental hazards		
ADR/RID: yes	IMDG Marine pollutant: yes	IATA: no
14.6 Special precautions for user		
No data available		
SECTION 15: Regulatory information		
15.1 Safety, health and environmental regulations/legislation specific for the		
substance or mixture		
This material safety data sheet complies with the requirements of Regulation (EC) No.		
1907/2006.		
National legislation		
Seveso III: Directive 2012/18/EU of the		
European Parliament and of the Council on the		
control of major-accident hazards involving		
dangerous substances.		
: ACUTE TOXIC		
: FLAMMABLE LIQUIDS		
Other regulations		
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or		
stricter national regulations where applicable.		
Take note of Dir 94/33/EC on the protection of young people at work.		
15.2 Chemical Safety Assessment		
For this product a chemical safety assessment was not carried out.		

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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