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### MATERIAL SAFETY DATA SHEET (MSDS)

### **SECTION 1. Product identifiers**

Product name: Acrylonitrile, GR 99%+ Product Code: A 1411 CAS No : 107-13-1 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 3), H331 Acute toxicity, Dermal (Category 3), H311 Skin irritation (Category 2), H315 Serious eye damage (Category 1), H318 Skin sensitization (Sub-category 1B), H317 Carcinogenicity (Category 1B), H350 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335 Long-term (chronic) aquatic hazard (Category 2), H411For 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 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H350 May cause cancer. H411 Toxic to aquatic life with long lasting effects. Precautionary statement(s) P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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. Supplemental Hazard Statements

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none

Restricted to professional users. Reduced Labeling (<= 125 ml) Pictogram Signal Word Danger Hazard statement(s) H317 May cause an allergic skin reaction. H350 May cause cancer. H318 Causes serious eye damage. H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled. Precautionary statement(s) P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P310 IF SWALLOWED: 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. Lachrymator., Vesicant. SECTION 3: Composition/information on ingredients

3.1 Substances Synonyms : Vinyl cyanide Formula : C3H3N Molecular weight : 53,06 g/mol CAS-No. : 107-13-1 EC-No. : 203-466-5 Index-No. : 608-003-00-4

Component	Classification	Concentration	
acrylonitrile			
CAS-No. 107-13-1	Flam. Liq. 2; Acute Tox. 3;	<= 100 %	
EC-No. 203-466-5	Skin Irrit. 2; Eye Dam. 1;		
Index-No. 608-003-00-4	Skin Sens. 1B; Carc. 1B;		
	STOT SE 3; Aquatic		
	Chronic 2; H225, H301,		
	H331, H311, H315, H318,		
2	H317, H350, H335, H411		

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 aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
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 eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.
Remove contact lenses.
If swallowed

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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 guickly as possible. 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 Carbon dioxide (CO2) Foam 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

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persons. Light sensitive. Storage class Storage class (TRGS 510): 3: Flammable liquids 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 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 Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Full contact Material: butyl-rubber Minimum layer thickness: 0,3 mm Break through time: 480 min Splash contact Material: Chloroprene Minimum layer thickness: 0,6 mm Break through time: 37 min data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. **Body Protection** Flame retardant antistatic protective clothing. Respiratory protection Recommended Filter type: Filter A-(P3) 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) Physical state Clear Liquid b) Color Colorless c) Odor Pungent d) Melting point/freezing point Melting point/range: -83 °C - lit 77 °C - lit. and boiling range e) Initial boiling point f) Flammability (solid,gas) No data available g) Upper/lower Upper explosion limit: 28 %(V) flammability or explosive limits Lower explosion limit: 2 %(V)

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h) Flash point i) Autoignition temperature j) Decomposition temperature k) pH I) Viscosity Viscosity, kinematic: Viscosity, dynamic: m) Water solubility n) Partition coefficient: n-octanol/water o) Vapor pressure p) Density Relative density q) Relative vapor density r) Particle characteristics s) Explosive properties t) Oxidizing properties 9.2 Other safety information Surface tension 27,3 mN/m at 24 °C Relative vapor density 1,83 - (Air = 1.0)

5 °C - closed cup 481 °C at 1.013 hPa

No data available No data available No data available 0,34 mPa.s at 25 °C Soluble

log Pow: 0,016 at 21 °C - Bioaccumulation is not expected. 133,3 hPa at 23,6 °C 0,806 g/cm3 No data available

No data available

No data available No data available None

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) 10.3 Possibility of hazardous reactions Risk of explosion with: Bromine Sodium hydroxide Esters Chlorine Nitric acid Violent polymerization may be caused by: alkali hydroxides Strong bases Oxidizing agents Copper Copper alloys sulfuric acid silver salt polymerisation initiators Peroxides sodium amide with Sodium hydroxide Exothermic reaction with: chlorosulfonic acid Strong acids 10.4 Conditions to avoid Heat. May polymerize on exposure to light. Warming. 10.5 Incompatible materials No data available 10.6 Hazardous decomposition products In the event of fire: see section 5

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#### **SECTION 11: Toxicological information** 11.1 Information on toxicological effects Acute toxicity Acute toxicity estimate Oral - 95,1 mg/kg (Calculation method) LD50 Oral - Rat - female - 95,1 mg/kg Remarks: (ECHA) Acute toxicity estimate Inhalation - 4 h - 2,05 mg/l - vapor(Calculation method) LC50 Inhalation - Rat - female - 4 h - 2,05 mg/l - vapor (OECD Test Guideline 403) Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract Acute toxicity estimate Dermal - 250 mg/kg (Calculation method) LD50 Dermal - Rabbit - 250 mg/kg Remarks: (IUCLID) Skin corrosion/irritation Skin - Rabbit Result: Skin irritation - 24 h (OECD Test Guideline 404) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Serious eye damage/eye irritation Eyes - Rabbit Result: Risk of serious damage to eyes. (OECD Test Guideline 405) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Respiratory or skin sensitization Maximization Test - Guinea pig Result: positive (OECD Test Guideline 406) Germ cell mutagenicity Test Type: Ames test Test system: S. typhimurium Metabolic activation: Metabolic activation Method: OECD Test Guideline 471 Result: positive Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster lung cells Metabolic activation: with and without metabolic activation Result: positive Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: without metabolic activation Method: OECD Test Guideline 476 Result: positive Carcinogenicity Presumed to have carcinogenic potential for humans Reproductive toxicity No data available Specific target organ toxicity - single exposure May cause respiratory irritation. Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Specific target organ toxicity - repeated exposure No data available Aspiration hazard No data available 11.2 Additional Information Endocrine disrupting properties Product: Assessment : The substance/mixture does not contain

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components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. RTECS: AT5250000 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. After absorption: Headache Nausea Vomiting Dizziness agitation Convulsions respiratory arrest Unconsciousness The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness. Other dangerous properties can not be excluded. This substance should be handled with particular care. **SECTION 12: Ecological information** 12.1 Toxicity Toxicity to fish semi-static test LC50 - Oryzias latipes - 5,1 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 2,5 mg/l - 48 h (OECD Test Guideline 202) Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - 10 mg/l - 72 h (OECD Test Guideline 201) Toxicity to bacteria EC5 - Pseudomonas putida - 53 mg/l - 16 h Remarks: (Lit.) (maximum permissible toxic concentration) Toxicity to fish(Chronic toxicity) flow-through test NOEC - Pimephales promelas (fathead minnow) -0,17 mg/l - 30 d Remarks: (ECHA) Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) NOEC - Daphnia magna (Water flea) - 2 mg/l - 21 d Remarks: (ECOTOX Database) 12.2 Persistence and degradability Biodegradability aerobic - Exposure time 14 d Result: 100 % - Inherently biodegradable. (OECD Test Guideline 302C) Ratio BOD/ThBOD 70 % Remarks: (Lit.) 12.3 Bioaccumulative potential Bioaccumulation Lepomis macrochirus - 14 d - 9,94 µg/l(acrylonitrile) Bioconcentration factor (BCF): 48 12.4 Mobility in soil

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No data available 12.5 Results of PBT and vPvB assessment 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. 12.6 Endocrine disrupting properties Product: Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. 12.7 Other adverse effects No data available **SECTION 13: Disposal considerations** 13.1 Waste treatment methods No data available **SECTION 14: Transport information** 14.1 UN number ADR/RID: 1093 IMDG: 1093 IATA: 1093 14.2 UN proper shipping name ADR/RID: ACRYLONITRILE, STABILIZED IMDG: ACRYLONITRILE, STABILIZED IATA: Acrylonitrile, stabilized Passenger Aircraft: Not permitted for transport14.3 Transport hazard class(es) ADR/RID: 3 (6.1) IMDG: 3 (6.1) IATA: 3 (6.1) 14.4 Packaging group ADR/RID: I IMDG: I IATA: I 14.5 Environmental hazards ADR/RID: yes IMDG Marine pollutant: yes IATA: no 14.6 Special precautions for user Tunnel restriction code : (C/E) Further information : 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. Authorisations and/or restrictions on use REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : acrylonitrile 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 : ENVIRONMENTAL HAZARDS : 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

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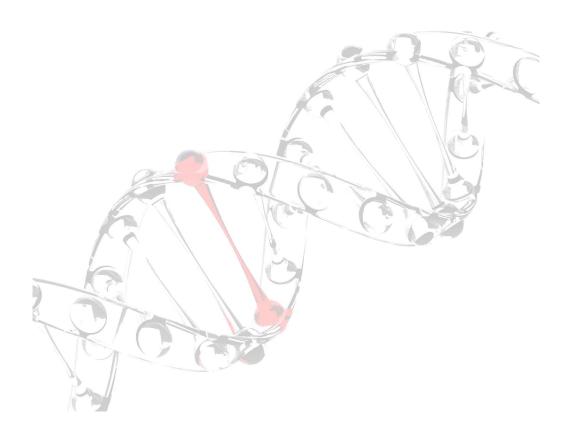
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For this product a chemical safety assessment was not carried out

#### 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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