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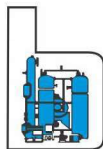


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Phone 03-5441-4526, Fax 03-5441-4528
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Phone 06-6282-0174, Fax 06-6282-1718

PROFILE



BALAJI AMINES LIMITED (BAL), one of the leading manufacturers of Aliphatic Amines in India, was set up in the year 1988 to cater to the growing requirements of value based speciality chemicals. BAL commenced manufacture of Methyl Amines in the year 1989 and subsequently added facilities for manufacture of Ethyl Amines and other derivatives of Methyl Amines. BAL has been consistently adding capacities and fine tuning process to provide a quality product at a least cost to the customers.

Worldover, Amines technology is a closely guarded process with only few handful companies having access to such technology. BAL for the first time in India, tested on a indigenously developed and developed it further over a period of time. Today, BAL's products are accepted in international markets and have gained the distinct export quality status which makes it one of the few companies in India having the potential to match the stringent International Quality Standards. BAL has awarded the most prestigious Two Star Export House in Solapur (Maharashtra) and Hyderabad (Telangana) India by The Ministry of Commerce, The Govt. of India.

BAL's state-of-the-art manufacturing facility is located at Tamalwadi village, near the Solapur town. The facility is completely furnished with latest technology like digital computerised controlled systems which facilitates, the control of operations from the control room. In addition BAL possess an excellent laboratory which helps them in conducting basic research and also to fine tune the process.

BAL'S PRODUCT RANGE COMPRISES

AMINES

- ❖ Mono Methyl Amine (MMA)
- ❖ Di-Methyl Amine (DMA)
- ❖ Tri-Methyl Amine (TMA)
- ❖ Mono-Ethyl Amine (MEA)
- ❖ Di-Ethyl Amine (DEA)
- ❖ Tri-Ethyl Amine (TEA)
- ❖ Di-Methyl Amino Ethanol (DMAE)
- ❖ Di-Ethyl Amino Ethanol (DEAE)

DERIVATIVES

- ❖ Di-Methyl Acetamide (DMAC)
- ❖ Di-Methyl Amine Hydrochloride (DMA HCL)
- ❖ Tri-Methyl Amine Hydrochloride (TMA HCL)
- ❖ Mono-Methyl Amine Hydrochloride (MMA HCL)
- ❖ Di-Ethyl Amine Hydrochloride (DEA HCL)
- ❖ Tri-Ethyl Amine Hydrochloride (TEA HCL)
- ❖ Mono-Ethyl Amine Hydrochloride (MEA HCL)
- ❖ Benzyl Tri Ethyl Ammonium Chloride (BTEAC)
- ❖ Di-Methyl Urea (DMU)
- ❖ Choline Chloride

SPECIALITY CHEMICALS

- ❖ N-Methyl-2-Pyrrolidone (NMP)
- ❖ N-Ethyl-2-Pyrrolidone (NEP)
- ❖ Gamma Butyrolactone
- ❖ 2-Pyrrolidone (2-P)
- ❖ Morpholine
- ❖ Dimethylformamide
- ❖ Acetonitrile

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VASUDHA PHARMA
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VISTIN PHARMA
VIRCHOW
WANBURY
WOCKHARDT
WEGO CHEMICALS
WILL & CO.
ZYDUS

MONOMETHYLAMINE (MMA)

CAS NO.	:	74-89-5																								
NATURE	:	It is available as anhydrous (liquified gas under pressure) and 40% solution (Colourless liquid)																								
PHYSICAL PROPERTIES (FOR ANHYDROUS)	:	<table><tr><td>Empirical Formula</td><td>CH₅N</td></tr><tr><td>Structural Formula</td><td>CH₃NH₂</td></tr><tr><td>Molecular Wt.</td><td>31.06</td></tr><tr><td>Refractive Index</td><td>1.351</td></tr><tr><td>Colour (APHA) Max</td><td>15</td></tr><tr><td>Solubility in Water</td><td>Soluble</td></tr><tr><td>Autoignition Temperature</td><td>430°C</td></tr><tr><td>Flammability Limits</td><td></td></tr><tr><td>LEL</td><td>5 Vol%</td></tr><tr><td>HEL</td><td>21 Vol%</td></tr><tr><td>Critical Temperature</td><td>155.9°C</td></tr><tr><td>Critical Pressure</td><td>73.6 Atm.</td></tr></table>	Empirical Formula	CH ₅ N	Structural Formula	CH ₃ NH ₂	Molecular Wt.	31.06	Refractive Index	1.351	Colour (APHA) Max	15	Solubility in Water	Soluble	Autoignition Temperature	430°C	Flammability Limits		LEL	5 Vol%	HEL	21 Vol%	Critical Temperature	155.9°C	Critical Pressure	73.6 Atm.
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HEL	21 Vol%																									
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Critical Pressure	73.6 Atm.																									

	For Anhydr.		For 40% soln.	
Sp. Gravity at 25°C		0.656		0.897
Boiling Point		-6.3°C		48°C
Freezing Point		-93.5°C		-38°C
Flash Point		--		-10°C
Vapour Pressure	°C	kg/cm ²	°C	kg/cm ²
	20	2.8	20	0.4
	40	5.8	40	0.9
	60	10.0	60	1.7

SPECIFICATIONS

Content	Unit	Anhydrous	40% Solution
Purity	%	99.50 min	40.00 min
Water	%	00.25 max	---
Ammonia	%	00.10 max	00.05 max
Other Amines	%	00.25 max	00.15 max

APPLICATION AREAS :

PHARMACEUTICALS	:	As an intermediate or catalytic agent for drugs like Adrenaline, Ephedrine and Pethidine. Vasodilators like Theophylline and Caffine are manufactured from Dimethyl Urea derived from MMA.
AGRO CHEMICALS	:	As a raw material for manufacture of systemic insecticides like Dimethoate, Carbaryl and Carbofuron and fungicides like Sodium N-Methyl dithiocarbamate. As a raw material to manufacture Monomethylacetoacetamide, an intermediate used to manufacture Monocrotophos one of the largest selling Insecticides.
CORROSION CONTROL	:	Methyldiethanolamine manufactured using MMA is used as a selective absorbent for H ₂ S gas during purification of petrochemicals in refineries.
PHOTOGRAPHIC CHEMICALS	:	Used in the manufacture of Photographic developer like N-Methyl P-Aminophenol sulphate, popularly known as METOL.
ROCKET FUEL	:	In manufacturing Monomethyl Hydrazine which is one of the ingredients of Rocket Fuel required for Space Reserch.
EXPLOSIVE	:	As a raw material to manufacture Explosive booster like Tetryl Unsymmetrical Dimethyl-Hydrazine and Explosive sensitisers like Monomethylamine Nitrate.
DYES	:	Used in the manufacture of Dyestuff intermediates like N-Methyl aniline, N-Methyl J Acid, Sarcosine and Anthraquinone derivatives.
SOLVENT	:	As a raw material to manufacture special solvent like N-Methyl - 2 - Pyrrolidone.
RUBBER CHEMICALS	:	Directly used as stabilising agent and preservative for Natural rubber latex.
PACKAGING	:	Anhydrous & Aqueous solutions are offered in bulk Road Tankers. Aqueous solutions is offered in 210 litre capacity UN Approved M.S. drums containing 170 kg net of MMA. Small quantities of anhydrous material can also be made available in cylinders provided by the customer on request.
IMDG CLASS	:	Anhydrous Class 2 Solution Class 3
PACKING GROUP AS PER IMO	:	Solution II
UN NO.	:	Anhydrous 1061 Solution 1235
E C NUMBER	:	200-820-0

DIMETHYLAMINE (DMA)

CAS NO.	:	124-40-3
NATURE	:	It is available as Anhydrous (liquified gas under pressure) and 40%, 50% & 60% solutions (Clear, Colourless Liquid)
PHYSICAL PROPERTIES (FOR ANHYDROUS)		Empirical Formula C_2H_7N
		Structural Formula $(CH_3)_2NH$
		Molecular Wt. 45.08
		Refractive Index 1.347
		Colour (APHA) Max. 15
		Solubility in Water Soluble
		Autoignition Temperature $402^\circ C$
		Flammability Limits

LEL 2.8 vol%
HEL 14.4 vol%

Critical Temperature $164.6^\circ C$

Critical Pressure 51.7 Atm.

SPECIFICATIONS

	For Anhydr.	For 40% soln.
Sp. Gravity at $25^\circ C$	00.649	00.892
Boiling Point	$06.9^\circ C$	$54.0^\circ C$
Freezing Point	$-92.2^\circ C$	$-37.00^\circ C$
Flash Point	--	$-18.00^\circ C$
Vapour Pressure	$^\circ C$ kg/cm ²	$^\circ C$ kg/cm ²
	20 1.7	20 0.3
	40 3.5	40 0.7
	60 6.2	60 1.4

Content	Unit	Anhydrous	40% Solution	50% Solution	60% Solution
Purity	%	99.50 min	40.00 min	50.00 min	60.00 min
Water	%	00.20 max	---	---	---
Ammonia	%	00.02 max	00.01 max	00.01 max	00.01 max
Other Amines	%	00.25 max	00.15 max	00.15 max	00.15 max

APPLICATION AREAS :

PHARMACEUTICALS: To manufacture Anaesthetics like Pentocaine based on Dimethyl Aminoethanol, Tranquilizers like Sparine and Local Anaesthetics like Teracaine. Used to manufacture Antihistamines like Diphenhydramine. Mepyramine Maleate (Anthisan), Chlorpheniramine, Pheniramine. DMA is also used extensively in manufacturing of Antibacterial like Trimethoprim.

AGRO CHEMICALS : As a raw material to manufacture Isoproturon, one of the most effective and widely used Systemic Weedicide.

As a raw material in manufacturing Ziram (Zinc Dimethyldithiocarbamate), Thiram (Tera methyl thirum disulphide) and Sodium or Potassium dimethyldithiocarbamate, which are effective for protection of crops from pathogenic fungi.

As and intermediate or catalytic agent to manufacture Aldicab (Temik) Systemic Insecticide to control insects. mites and nematodes. To manufacture Herbicides like 2,4-D & 2,4-5 T dimethylamine salts, urea derivatives like Diuron, Monuron, Chloroxuron and Fenuron etc.

RAYON INDUSTRY : Used as a modifier in the manufacture of Viscose Rayon Filament and Tyre Cord, to improve the tensile strength.

SOLVENTS : As a raw material for the manufacture of powerful and versatile solvents like Dimethyl Acetamide (DMAC), Dimethyl formamide (DMF), Hexamethyl Phosphoramide used in acrylic fibre, pharmaceutical and other industries.

RUBBER CHEMICALS As a raw material to manufacture Vulcanisation Accelerators such as Tetra Methyl Thiuram Disulphide (TMTDS), Zinc Dimethyldithiocarbamate, Sodium Dimethyl Dithiocarbamate and Potassium Dimethyl Dithiocarbamate.

ION EXCHANGE : Used in manufacture of water purification Ion Exchange Resins like Quaternary Ammonium Salts based on Chloromethylated Styrene copolymer and Dimethylamino Ethanol.

DYES : Used in the manufacture of Acid Dyes and Stibene Dyes.

PROPELLANT : As a raw material to manufacture 1,1 -Dimethyl Hydrazines.

MISC. : Used to manufacture Emulsifying Agent like Dimethylaminoethanol, 2-Amino, 2-Methyl-1 Propanol, surfactant like Lauryl Dimethyl amine oxide and Quaternary Ammonium compounds, which act as germicides.

PACKAGING : Anhydrous & Aqueous Solutions are offered in bulk Road Tankers, Aqueous solutions is offered in 210 litre capacity UN Approved M.S. drums containing 170 kg net DMA 40% solution & 160 kg. net of DMA 50% solution.

Small quantities of Anhydrous material can also be made available in cylinders provided by the customer on request.

IMDG CLASS : Anhydrous Class 2
Solution Class 3

PACKING GROUP : Solution II

AS PER IMO

UN No. : Anhydrous 1032
Solutions 1160

E C NUMBER : 204-697-4

TRIMETHYLAMINE (TMA)

CAS NO.	:	75-50-3
NATURE	:	It is available as anhydrous (liquified gas under pressure) and 30% solution (Clear, colourless liquid)
PHYSICAL PROPERTIES (FOR ANHYDROUS)	:	Empirical Formula C_3H_9N Structural Formula $(CH_3)_3N$ Molecular Wt. 59.11 Refractive Index 1.345 Colour (APHA) Max 15 Solubility in Water Soluble Autoignition Temperature 190°C LEL 2 vol% HEL 11.6 vol% Critical Temperature 160.1°C Critical Pressure 40.2 Atm.

	For Anhydr.	30% soln.
Sp. Gravity at 25°C	0.627	0.930
Boiling Point	2.9°C	38°C
Freezing Point	-117.3°C	-5°C
Flash Point	--	<0°C
Vapour Pressure	°C kg/cm ²	°C kg/cm ²
	20 1.9	20 0.5
	40 3.2	40 1.2
	60 6.2	60 2.4

SPECIFICATIONS

Content	Unit	Anhydrous	30% Solution
Purity	%	99.50 min	30.00 min
Water	%	00.20 max	---
Ammonia	%	00.02 max	00.02 max
Other Amines	%	00.28 max	00.28 max

APPLICATION AREAS :

DRUGS & PHARMACEUTICALS	:	Choline derivatives manufactured from TMA are used in medication of liver disorders. Used directly as Acid binder in the manufacture of Sulpha Drugs.
AGRO CHEMICALS	:	To manufacture plant growth controllers like Cycocel or Chloromequat Chloride (2-Chloroethyl trimethyl ammonium chloride)
ANIMAL FEED	:	Animal/poultry feed additives like Choline Chloride is manufactured from TMA.
ION EXCHANGE	:	To manufacture Ion exchange Resins based on Chloromethylated Polystyrene.
SURFACE ACTIVE AGENTS	:	Use in the manufacture of Alkyl Quaternary Ammonium Salts used as germicides and fabric softners with antistatic properties.
MISCELLANEOUS	:	Acceleration of polymerisation of Methyl Methacrylate derivative. Quaternary ammonium salts of Trimethylamine are used as Phase Transfer Catalyst.
PACKAGING	:	Anhydrous & Aqueous solutions offered in bulk Road Tankers. Aqueous solution is offered in 210 litre capacity UN Approved M.S. drums containing 170 kg net of TMA 30% Solution. Small quantities of Anhydrous material can also be made available in cylinders provided by the customers on request.
IMDG CLASS	:	Anhydrous Class 2 Solution Class 3
UN NO.	:	Anhydrous 1083 Solution 1297
E C NUMBER	:	200-875-0

MONOETHYLAMINE (MEA)

CAS NO.	:	75-04-7
COMPOSITION	:	It is available as 70% solution in Water*
PHYSICAL PROPERTIES	:	Empirical Formula C_2H_7N
		Structural Formula $(C_2H_5)NH_2$
		Molecular Wt. 45.08
		Sp. Gravity at 20°C 0.79 - 0.81
		Boiling Point 38°C
		Freezing Point -83°C
		Colour (APHA) Max 15
		Solubility in Water soluble
		Flash Point < - 17.8°C
		Autoignition Temperature 384°C
		Flammability Limits
		LEL 3.5 vol%
		HEL 14 vol%
		Vapour Pressures
		Pressure in mm of Hg Temperature in °C
		325 20
		760 38

SPECIFICATIONS

Content	Unit	70% Solution	65% Solution
Purity min. (wt.%) by GC	%	70.00 min	65.00 min
Impurities (max) % by wt.	%	00.14 max	00.14 max

APPLICATION AREAS :

TEXTILES : As a raw material in the manufacture of Carbamate Formaldehyde condensate used for Wash and Wear Fabrics.

AGRO CHEMICALS : As a raw material for Herbicides like Atrazine, Simazine and Cyanazine.

PLASTICS : As catalyst in the production of Urethane foam.

DYESTUFF : As intermediate / catalyst in the production of Ethyl cyano Pyrrolidone disperse and Reactive Dyes.

STORAGE : Can be handled in a safe manner in containers. Great care should be taken when the containers and vials of sample are to be opened because of its vapour pressure. Avoid contact with copper and its alloys.

HEALTH & SAFETY : Monoethylamine is irritating to skin, Eyes and mucous membrane, In case of contact, affected area should be washed with plenty of water. A dilute solution of Acetic Acid (2%) should be used to neutralize the Amine.

Continuous inhalation of fumes and ingestion should be avoided. In event of inhalation or ingestion, victim should be moved to fresh air and oxygen should be administered. Vapours of Acetic acid (2%) or vinegar diluted 1:5 with water should be inhaled. To dilute the chemical in stomach, patient should consume copious quantity of milk and water.

A medical practitioner should be consulted at once.

PACKAGING : MEA 70% soln. is available in 160 kgs. UN Approved Mild Steel Drums.

IMDG CLASS : Class 3

PACKING GROUP : II
AS PER IMO

UN CODE NO. : 270

BRUSSELS T.NO. : 2921.11.00

E C NUMBER : 200-834-7

DIETHYLAMINE (DEA)

CAS NO.	:	109-89-7																																									
NATURE	:	It is a colourless liquid with strong smell of Ammonia.																																									
PHYSICAL PROPERTIES	:	<table><tr><td>Empirical Formula</td><td>C₄H₁₁N</td></tr><tr><td>Structural Formula</td><td>(C₂H₅)₂NH</td></tr><tr><td>Molecular Wt.</td><td>73.14</td></tr><tr><td>Sp. Gr.at 20°C</td><td>0.703-0.707</td></tr><tr><td>Refractive Index</td><td>1.3864</td></tr><tr><td>Boiling Pt.</td><td>55.5°C</td></tr><tr><td>Freezing Point</td><td>-50.0°C</td></tr><tr><td>Colour (APHA) Max</td><td>15</td></tr><tr><td>Solubility in Water</td><td>Soluble</td></tr><tr><td>Flash Point</td><td>< -17.8°C</td></tr><tr><td>Autoignition Temperature</td><td>312°C</td></tr><tr><td>Flammability Limits</td><td></td></tr><tr><td>LEL</td><td>1.8 vol%</td></tr><tr><td>HEL</td><td>10.1 vol%</td></tr><tr><td>Vapour Pressures</td><td></td></tr><tr><td>Pressure in mm of Hg</td><td>Temperature in °C</td></tr><tr><td>40</td><td>- 10.5</td></tr><tr><td>100</td><td>7.0</td></tr><tr><td>300</td><td>31.0</td></tr><tr><td>760</td><td>55.5</td></tr></table>		Empirical Formula	C ₄ H ₁₁ N	Structural Formula	(C ₂ H ₅) ₂ NH	Molecular Wt.	73.14	Sp. Gr.at 20°C	0.703-0.707	Refractive Index	1.3864	Boiling Pt.	55.5°C	Freezing Point	-50.0°C	Colour (APHA) Max	15	Solubility in Water	Soluble	Flash Point	< -17.8°C	Autoignition Temperature	312°C	Flammability Limits		LEL	1.8 vol%	HEL	10.1 vol%	Vapour Pressures		Pressure in mm of Hg	Temperature in °C	40	- 10.5	100	7.0	300	31.0	760	55.5
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APPLICATION AREAS :

PHARMACEUTICALS :As raw material for Anaesthetics likeXylocaine, Procaine and Novacaine. As a raw material for Antimalarials such as Amidoquin. Novaldiamine, as an Intermediate for Chlorquin Phosphate and in the manufacture of Riboflavin (Vitamin B2)

As an intermediate in manufacturing of Ampicilin, Amoxycillin, Diclofenac ethyl salt.

To manufacture intermediate like Diethyl Amino Ethanol and disinfectant like Sodium Diethyldithio Carbamate (SDEDC.)

AGRO CHEMICALS : As a raw material for Herbicides like Atrazine, Simazine and Cyanazine.

RUBBER CHEMICALS : As a raw material for manufacture of primary accelerators like Zinc Diethyl Dithio Carbamate (ZDDC)

AGRO CHEMICALS : As raw material for Pesticides like Thibencarb and Pesticide intermediates like Diethyl Aceto Acetamide used in the manufacture of Phosphamidon and Napropamide.

DYESTUFF : As a raw material in the manufacture of intermediates like p-Diethylamine Benzaldehyde.

OIL FIELD CHEMICALS : As corrosion Inhibitors for Sour Well Gases.

PLASTIC INDUSTRY : As Urethane Chain stopper and a Plasticizer for Cellulose Acetate and in intermediates for stabilization of Plastic Monomers.

CONSUMER PRODUCTS : As raw material in the manufacture of Insect Repellents like N,N-Diethylm-Toluamide (DEET) and DEPA.

STORAGE : Can be handled in safe manner in containers. Can be stored for a long period in closed containers. Avoid contact with copper and its alloys.

HEALTH & SAFETY : Diethylamine is irritating to skin, eyes and mucous membrane. In case of contact, affected area should be washed with plenty of water. A dilute solution of Acetic Acid (2%) should be used to neutralize the Amine.

Continuous inhalation of fumes and ingestion should be avoided. In event of inhalation or ingestion, victim should be moved to fresh air and oxygen shouldbe administered. Vapours of Acetic acid (2%) or vinegar diluted 1:5 with water should be inhaled. To dilute the chemical in stomach, patient should consume copious quantity of milk and water.

A medical practitioner should be consulted at once.

PACKAGING : 140 kg. net wt. in UN Approved Mild Steel Drums.

IMDG CLASS : Class 3

PACKING GROUP : II

AS PER IMO

UN Code No. : 1154

Brussels T.No. : 2921.12.00

E C NUMBER : 203-716-3

TRIETHYLAMINE (TEA)

CAS No.	:	121-44-8																																									
NATURE	:	It is a colourless liquid with an ammonical odour. TEA exhibits golden yellow colour on long standing.																																									
PHYSICAL PROPERTIES	:	<table><tr><td>Empirical Formula</td><td>C₆H₁₅N</td></tr><tr><td>Structural Formula</td><td>(C₂H₅)₃N</td></tr><tr><td>Molecular Wt.</td><td>101.19</td></tr><tr><td>Sp. Gr. at 20°C</td><td>0.726-0.730</td></tr><tr><td>Refractive Index</td><td>1.4010</td></tr><tr><td>Boiling Pt.</td><td>89.4°C</td></tr><tr><td>Freezing Point</td><td>< -114.8°C</td></tr><tr><td>Color (APHA) Max</td><td>20</td></tr><tr><td>Solubility in Water</td><td>Partly soluble</td></tr><tr><td>Flash Point</td><td>-6.7°C</td></tr><tr><td>Autoginition Temperature</td><td>249°C</td></tr><tr><td>Flammability Limits</td><td></td></tr><tr><td>LEL</td><td>1.2 vol%</td></tr><tr><td>HEL</td><td>8.0 vol%</td></tr><tr><td>Vapour Pressures</td><td></td></tr><tr><td>Pressure in mm of Hg</td><td>Temperature in °C</td></tr><tr><td>40</td><td>12.0</td></tr><tr><td>100</td><td>32.5</td></tr><tr><td>300</td><td>62.0</td></tr><tr><td>760</td><td>88.8</td></tr></table>		Empirical Formula	C ₆ H ₁₅ N	Structural Formula	(C ₂ H ₅) ₃ N	Molecular Wt.	101.19	Sp. Gr. at 20°C	0.726-0.730	Refractive Index	1.4010	Boiling Pt.	89.4°C	Freezing Point	< -114.8°C	Color (APHA) Max	20	Solubility in Water	Partly soluble	Flash Point	-6.7°C	Autoginition Temperature	249°C	Flammability Limits		LEL	1.2 vol%	HEL	8.0 vol%	Vapour Pressures		Pressure in mm of Hg	Temperature in °C	40	12.0	100	32.5	300	62.0	760	88.8
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SPECIFICATION	:	<table><tr><td>Purity min. (wt. %) by GC</td><td>99.6</td></tr><tr><td>Water Content (max.) % by wt.</td><td>0.10</td></tr><tr><td>Impurities (max.)% by wt.</td><td>0.40</td></tr></table>		Purity min. (wt. %) by GC	99.6	Water Content (max.) % by wt.	0.10	Impurities (max.)% by wt.	0.40																																		
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APPLICATION AREAS :

PHARMACEUTICALS	:	Used as an intermediate in the manufacture of Antibiotics like Penicillin, Ampicillin, Amoxycillin, Cephalexin and other derivatives.
PAINT INDUSTRY	:	Used in manufacture of Electro Deposit Paints.
AGRO CHEMICALS	:	As an intermediate or catalytic agent for Pesticides such as Fenvalerate, Butachlor, DDVP, Cypermethrin, Monocrotophos, Fonaphos, Phosphamidon and Alfamethrin.
FOUNDRY CHEMICALS	:	In Foundry industry as Cross linking agents (Binders)
PERFUMERY CHEMICALS	:	As catalyst in the esterification reaction to manufacture perfumes.
STORAGE	:	Can be handled in a safe manner in containers. Can be stored for a long period in closed containers. Aviod contact with copper and its alloys. TEA tends to darken on standing.
HEALTH & SAFETY	:	Triethylamine is irritating to skin, eyes and mucous membrane. In case of contact, affected area should be washed with plenty of water. A dilute solution of Acetic Acid (2%) should be used to neutralize the Amine. Continuous inhalation of fumes and ingestion should be avoided. In event of inhalation or ingestion, victim should be moved to fresh air and oxygen should be administered. Vapours of Acetic acid (2%) or vinegar diluted 1:5 with water should be inhaled. To dilute the chemical in stomach, patient should consume copious quantity of milk and water. A medical practitioner should be consulted at once.
PACKAGING	:	150 kg. net wt. in UN Approved Mild Steel Drums.
IMDG CLASS	:	Class 3
PACKING GROUP AS PER	:	II
IMO	:	
UN CODE NO.	:	1296
BRUSSELS T.NO.	:	2921.19.10
E C NUMBER	:	204-469-4

DIMETHYL AMINO ETHANOL (DMAE)

CAS NO.	:	108-01-0																								
NATURE	:	It is a Clear, Colourless to light pale yellow liquid																								
PHYSICAL PROPERTIES	:	<table><tr><td>Structural Formula</td><td>(CH₃)₂N-CH₂-CH₂-OH</td></tr><tr><td>Molecular Wt.</td><td>89.14</td></tr><tr><td>Refractive Index</td><td>1.4294</td></tr><tr><td>Odor</td><td>Ammoniacal Odor</td></tr><tr><td>Solubility in Water</td><td>Soluble</td></tr><tr><td>Flash Point</td><td>39.4°C</td></tr><tr><td>Specific Gravity</td><td>0.8883</td></tr><tr><td>at 20 / 20°C</td><td></td></tr><tr><td>Vapour Pressure (mm hg)</td><td>4.4@20°C</td></tr><tr><td>Vapour Density</td><td>3.1</td></tr><tr><td>Boiling Point</td><td>134.6°C</td></tr><tr><td>Freezing Point</td><td>- 58.6°C</td></tr></table>	Structural Formula	(CH ₃) ₂ N-CH ₂ -CH ₂ -OH	Molecular Wt.	89.14	Refractive Index	1.4294	Odor	Ammoniacal Odor	Solubility in Water	Soluble	Flash Point	39.4°C	Specific Gravity	0.8883	at 20 / 20°C		Vapour Pressure (mm hg)	4.4@20°C	Vapour Density	3.1	Boiling Point	134.6°C	Freezing Point	- 58.6°C
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Boiling Point	134.6°C																									
Freezing Point	- 58.6°C																									

SPECIFICATIONS	:	
	Purity	99.50% MIN.
	Water	00.2% MAX.
	Colour (APHA)	30 MAX.

APPLICATION AREAS :

Use in the preparation of water - reducible coating formulations.
Can be used to control corrosion in Boiler water condensate return lines.
Use in preparation of Textile Assistants.
Use in preparation of Catalysts for polymerizing olefin oxides and sulfides.
Use in preparation of an antistatic agent for polystyrene.
Use in preparation of Ion-Exchange resins.
Use in intermediate for the manufacture of antihistamines and local anesthetics in pharma.

STORAGE & HANDLING : Protect against physical damage. Store in a cool, dry well ventilated location, Clean carbon steel is satisfactory as a material of construction for storage tanks and transfer systems, provided adequate precautions are observed to guard against rust contamination. Eliminate all sources of ignition in case of spills and leaks.

PACKING : 190 Kgs. Net. Wt. in UN Approved HM HDPE Drums

IMDG CLASS : 3

PACKING GROUP : II

UN No. : 2051

E C NUMBER : 203-542-8

DIETHYL AMINO ETHANOL (DEAE)

CAS NO. : 100-37-8

NATURE : It is a Clear, Colourless Liquid

PHYSICAL PROPERTIES :

Structural Formula	$C_6H_{15}NO$
Molecular Wt.	117.19
Odor	Ammoniacal Odor
Solubility in Water	Soluble
Flash Point	60 °C
Specific Gravity at 20/ 20° C	0.882 to 0.888
Boiling Point	163°C
Freezing Point	- 70 °C

SPECIFICATIONS :

Purity	99.6% MIN.
Water	00.20% MAX
Colour (APHA)	30 MAX.

APPLICATION AREAS :

- ⌘ Use in the boiler chemical systems to prevent carbonic acid and corrosion in return lines.
- ⌘ Use in carbonic production as an inert ingredient in pesticide formulations.
- ⌘ Use as an intermediate for manufacturing cosmetics, textile finishing agents, fabric softeners and dyes, drugs and pharmaceuticals and fatty acid.
- ⌘ Use in antitrust compositions and acts as a curing agent for resins.

STORAGE & HANDLING : Protect against physical damage. Store in a cool, dry well - ventilated location. Clean carbon steel is satisfactory as a material of construction for storage tanks and transfer systems, provided adequate precautions are observed to guard against rust contamination. Eliminate all sources of ignition in case of spills and leaks.

PACKING : 190 Kgs. Net. Wt. in UN Approved HM HDPE Drums

IMDG CLASS : 3

PACKING GROUP : III

UN No. : 2686

E C NUMBER : 202-845-2

N,N-DIMETHYLACETAMIDE (DMAC)

CAS NO.	:	127-19-5																																		
NATURE	:	Clear, Colourless Liquid.																																		
PHYSICAL PROPERTIES	:	<table><tr><td>Empirical Formula</td><td>C₃H₈ON</td></tr><tr><td>Structural Formula</td><td>(CH₃)₂CONH₂</td></tr><tr><td>Molecular Weight</td><td>87.12</td></tr><tr><td>Refractive Index</td><td>1.4350- 1.4450</td></tr><tr><td>Solubility in Water</td><td>Soluble</td></tr><tr><td>Autoignition Temperature</td><td>490°C</td></tr><tr><td>Distillation Range</td><td>160 - 165°C</td></tr><tr><td>Flammability Limits</td><td></td></tr><tr><td>LEL</td><td>1.8%</td></tr><tr><td>HEL</td><td>11.5%</td></tr><tr><td>Critical Temperature</td><td>385°C</td></tr><tr><td>Critical Pressure</td><td>39.7 Atm</td></tr><tr><td>Sp. gravity at 25°C</td><td>0.945</td></tr><tr><td>Boiling pt.</td><td>166°C</td></tr><tr><td>Freezing pt.</td><td>-20°C</td></tr><tr><td>Flash point (TOL)</td><td>70°C</td></tr><tr><td>Vapour pressure at 25°C mm of Hg</td><td>2.0</td></tr></table>	Empirical Formula	C ₃ H ₈ ON	Structural Formula	(CH ₃) ₂ CONH ₂	Molecular Weight	87.12	Refractive Index	1.4350- 1.4450	Solubility in Water	Soluble	Autoignition Temperature	490°C	Distillation Range	160 - 165°C	Flammability Limits		LEL	1.8%	HEL	11.5%	Critical Temperature	385°C	Critical Pressure	39.7 Atm	Sp. gravity at 25°C	0.945	Boiling pt.	166°C	Freezing pt.	-20°C	Flash point (TOL)	70°C	Vapour pressure at 25°C mm of Hg	2.0
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APPLICATION AREAS :

USES

- Use in Acrylic fibre industry
 - As a solvent in the manufacture of Acrylic fibre.
- Use in Polyester film industry
 - Solvent in the manufacture of polyester films.
- Paint Remover
- Used as a solvent in Paint stripping because of its very rapid removal action.
- Use in the Drug Industry
 - Used both as a solvent as well as reactant in drug industry.

PACKING

: The product can be despatched through Road Tankers (SS), small packing of 200 kgs. UNApproved HDPE drums.

INDUSTRIES SERVED

: Acrylic Fibre, Polyester Films, Drugs.

E C NUMBER

: 204-826-4

DIMETHYLAMINE HYDROCHLORIDE (DMA HCL)

CAS NO.	:	506-59-2														
COMPOSITION	:	White Crystalline Powder.														
PHYSICAL PROPERTIES	:	<table><tr><td>Empirical Formula</td><td>C₂H₈NCL</td></tr><tr><td>Structural Formula</td><td>(CH₃)₂-NH-HCL</td></tr><tr><td>Molecular Wt.</td><td>81.55</td></tr><tr><td>Refractive Index</td><td>1.4404</td></tr><tr><td>Solubility in Water</td><td>Soluble</td></tr><tr><td>Turbidity</td><td>0.3</td></tr><tr><td>Flammability</td><td>Non Flammable</td></tr></table>	Empirical Formula	C ₂ H ₈ NCL	Structural Formula	(CH ₃) ₂ -NH-HCL	Molecular Wt.	81.55	Refractive Index	1.4404	Solubility in Water	Soluble	Turbidity	0.3	Flammability	Non Flammable
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Structural Formula	(CH ₃) ₂ -NH-HCL															
Molecular Wt.	81.55															
Refractive Index	1.4404															
Solubility in Water	Soluble															
Turbidity	0.3															
Flammability	Non Flammable															
		Crystalline Powder														
SPECIFICATIONS	:	<table><tr><td>Assay (min)</td><td>99.0%</td></tr><tr><td>Moisture Content</td><td>0.5%</td></tr><tr><td>Melting Range</td><td>168-172°C</td></tr><tr><td>pH in 10%Soln.</td><td>5.0 - 6.5</td></tr></table>	Assay (min)	99.0%	Moisture Content	0.5%	Melting Range	168-172°C	pH in 10%Soln.	5.0 - 6.5						
Assay (min)	99.0%															
Moisture Content	0.5%															
Melting Range	168-172°C															
pH in 10%Soln.	5.0 - 6.5															

APPLICATION AREAS :

PHARMACEUTICALS	:	This is being used as an intermediate (in powder form) for manufacture of Ranitidine Hcl and Metformin Hcl.
STORAGE & HANDLING	:	Keep container tightly closed suitable for any general chemical storage area. Storage & Handling area should be well ventilated to keep vapour concentration at its lowest. Material (solution) can be stored in drums & tanks. They should be checked for leaks before filling and during prolong storage. Fittings of aluminium, copper, copper alloys, galvanised metal, magnesium and zinc alloys should be avoided as DMA HCL is corrosive to these metals.
PACKAGING	:	Aqueous solution is offered in 210 litre capacity HMHDPE drum containing 200 kg net of DMA HCL. Crystalline powder is offered in HDPE bags/drums containing 25 Kg net of DMA HCL. Also can be offered in 50kg Fibre Drums.
FIRST AID INGESTION INHALATION	:	Call a physician If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
SKIN CONTACT EYE CONTACT	:	In case of contact, flush skin with water. Immediately flush with water for 15 minutes.
FIRE RISK	:	Flash Point N.A. Autoignition N.A. Flammable Limits N.A.
E C NUMBER	:	Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire. 208-046-5

PRECAUTIONS

Personal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gauntlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

TRIMETHYLAMINE HYDROCHLORIDE (TMA HCL)

CAS NO. : 593-81-7

COMPOSITION : White Crystalline Powder.

PHYSICAL PROPERTIES :

Empirical Formula	CH ₄ NCL
Structural Formula	(CH ₃) ₃ -N-HCL
Molecular Wt.	92.54
Solubility in water	Soluble
pH	5.0-6.0
Flammability	Non Flammable
LD 50	IVN : 325 mg/kg on mice

SPECIFICATIONS :

Assay (min)	99.0%	70% Solution
Moisture Content	0.5%	---
Melting Range	280-282°C	---
pH in 10%Soln.	5.0 - 6.5	3.0 - 6.0

APPLICATION AREAS :

ANIMAL FEED : It is used in manufacture Choline Chloride which is used as animal feed and in pharmaceuticals.

MISCELLANEOUS : It is used in performance chemicals & speciality chemicals.

STORAGE & HANDLING : Keep container tightly closed suitable for any general chemical storage area. Storage and handling area should be well ventilated.

PACKAGING : It is offered in HDPE bagas/ Drums with 25 kg net wt. Also can be offered in 50 kg Fibre Drums.

FIRST AID
INGESTION : Call a physician

INHALATION : If inhaled, remove to fresh air, If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water.

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash point N.A.
Auto Ignition N.A.
Flammable Limits N.A.

E C NUMBER : Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire.
209-810-0

PRECAUTIONS

Personal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gauntlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

MONOMETHYLAMINE HYDROCHLORIDE (MMA HCL)

CAS NO. : 593-51-1
NATURE : White crystalline, free-flowing powder.

PHYSICAL PROPERTIES : Molecular Wt. 67.46
Solubility in Water Soluble

Crystalline Powder

SPECIFICATIONS : Assay (min) 99.0%
Moisture Content 0.50%
Melting Range 227-231°C
pH in 10%Soln. 5.0 - 6.5

APPLICATION AREAS :

: Use in Pesticides Industry
- As an intermediate in the manufacture of Cypermethric Acid Chloride (CMAC).

PACKAGING : It is offered in HDPE Bags / Drums / Fiber Drums
containing 25 kg / 50 kg net of MMA HCL.

FIRST AID

INGESTION : Call a physician

INHALATION : If inhaled, remove to fresh air. If not breathing , give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water,

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash Point N.A.
Autoigniton N.A.
Flammable Limits N.A.

E C NUMBER : 209-795-0
Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire

PRECAUTIONS

Presonal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gauntlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

DIETHYLAMINE HYDROCHLORIDE (DEA HCL)

CAS NO.	:	660-68-4
NATURE	:	A White Crystalline Powder.
PHYSICAL PROPERTIES	:	Empirical Formula $C_4H_{12}NCl$
		Structural Formula $(C_2H_5)_2-NH.HCl$
		Molecular Wt. 109.60
		Solubility in Water Soluble
		Flammability Non Flammable
SPECIFICATIONS	:	Appearance White crystalline, free-flowing powder
		Assay % 99.00 min
		Moisture Content % 0.50 max
		Melting Range 229-230°C
		pH of 10% Solution 5.0 to 6.5

APPLICATION AREAS :

- : Use in Pesticides Industry
- As an intermediate in the manufacture of Cypermethric Acid Chloride (CMAC).

PACKAGING : It is offered in HDPE Bags / Drums / Fiber Drums containing 25 kg net of DEA HCL.

FIRST AID

INGESTION : Call a physician

INHALATION : If inhaled, remove to fresh air. If not breathing , give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water,

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash Point N.A.
Autoigniton N.A.
Flammable Limits N.A.

E C NUMBER : Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire
: 211-541-9

PRECAUTIONS

Presonal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gaunlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

TRIETHYLAMINE HYDROCHLORIDE (TEA HCL)

CAS NO. : 554-68-7
NATURE : White crystalline, free-flowing powder.

PHYSICAL PROPERTIES : Molecular Wt. 137.5
Solubility in Water Soluble

Crystalline Powder

SPECIFICATIONS : Assay (min) 99.0%
Moisture Content 1.0%
Melting Range 253-254°C
pH in 10%Soln. 5.0 - 6.5

APPLICATION AREAS :

: Use in Pesticides Industry
- As an intermediate in the manufacture of Cypermethric Acid Chloride (CMAC).

PACKAGING : It is offered in HDPE Bags / Drums / Fiber Drums
containing 25 kg / 50 kg net of TEA HCL.

FIRST AID

INGESTION : Call a physician

INHALATION : If inhaled, remove to fresh air. If not breathing , give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water,

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash Point N.A.
Autoigniton N.A.
Flammable Limits N.A.

E C NUMBER : 209-067-2
Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire

PRECAUTIONS

Presonal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gaunlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

MONOETHYLAMINE HYDROCHLORIDE (MEA HCL)

CAS NO. : 557-66-4
NATURE : White crystalline, free-flowing powder.

PHYSICAL PROPERTIES : Molecular Wt. 81.55
Solubility in Water Soluble

Crystalline Powder

SPECIFICATIONS : Assay (min) 99.0%
Moisture Content 0.5%
Melting Range 158-160°C

APPLICATION AREAS :

: Use in Pesticides Industry
- As an intermediate in the manufacture of Cypermethric Acid Chloride (CMAC).

PACKAGING : It is offered in HDPE Bags / Drums / Fiber Drums
containing 25 kg / 50 kg net of MEA HCL.

FIRST AID

INGESTION : Call a physician

INHALATION : If inhaled, remove to fresh air. If not breathing , give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water,

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash Point N.A.
Autoigniton N.A.
Flammable Limits N.A.

E C NUMBER : Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire
: 209-182-8

PRECAUTIONS

Presonal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gaunlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

BENZYL TRI ETHYL AMMONIUM CHLORIDE (BTEAC)

CAS NO. : 56-37-1

APPEARANCE : White to Beige Crystalline Power.

PHYSICAL PROPERTIES

Molecular Formula : $C_{13}H_{22}ClN$

Molecular Weight : 227.78

Solubility in Water & Alcohol : Soluble

SPECIFICATION :

Assay% W/W (min.) : 99.0%

(On dry basis)

Moisture Content% W/W/ (max:) 1.0%

Melting Range : 183°C - 185°C

APPLICATION AREAS :

STORAGE : In air-tight containers in a dry place.
Product is hygroscopic.

STANDARD PACKAGING : Fibre / HDPE drums having 25 kgs/50 Kgs. net BTEAC.

FIRST AID
INGESTION : Call a physician

INHALATION : In inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call a physician.

SKIN CONTACT : In case of contact, flush skin with water.

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash point N.A.
Autoignition N.A.
Flammable Limits N.A.
Fire Extinguisher Media - Use extinguisher
media appropriate for surrounding fire.

E C NUMBER : 200-270-1

PRECAUTIONS

Personal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield, rubber gauntlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher, safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

DIMETHYL UREA (DMU)

CAS NO. : 96-31-1

COMPOSITION : It is a white to off-white Crystalline Powder free
from visible extraneous matter.

PHYSICAL PROPERTIES : Empirical Formula $\text{CH}_3\text{NHCO-NHCH}_3$
Solubility Soluble in water, acid, any
Organic Solvents. Highly
hygroscopic

Colour Max. N/60000 12

(1:1 Aqueous solution)

Colour of Melt Max. N/10000 I_2

Residue on Ignition : Max. 0.025%

Reaction to Bromo- Neutral

thym of Blue

Loss at 60°C Max. 0.2%

SPECIFICATIONS :

Assay (Min.) 97% by HPLC

M.C. (Max) 1.0%

Other Impurities (Max) 3.0%

APPLICATION AREAS :

PHARMACEUTICALS : In a wide variety of synthetic medicinals like Theophylline, Aminophylline, Etophylline
and Caffeine also used as Herbicide.

STORAGE & HANDLING : Keep container tightly closed suitable for any general chemical storage area.

Storage & handling area should be well ventilated.

Material can be stored in drums & bags.

PACKAGING : Offered in HDPE bags / can also be offered in 25 kgs/50 kgs Fibre / HDPE Drums with
double polyliners inside.

FIRST AID

INGESTION : Call a Physician.

INHALATION : If inhaled remove to fresh air, If not breathing, give artificial respiration. If breathing is
difficult, give oxygen.

SKIN CONTACT : In case of contact, flush skin with water.

EYE CONTACT : Immediately flush with water for 15 minutes.

FIRE RISK : Flash point N.A.
Autoignition N.A.
Flammable Limits N.A.
Fire Extinguisher Media -Use extinguisher media appropriate for surrounding fire.

E C NUMBER : 202-498-7

PRECAUTIONS

Personal protective equipments like hard hat with brim, chemicals splash goggles, full length face shield,
rubber gauntlet gloves and rubber apron must be used. Safety Equipments such as fire extinguisher,
safety showers and eye wash fountain should be provided.

Avoid contact, inhalation of solutions. Use personal protective equipments while handling the material.

CHOLINE CHLORIDE 60% CORN COB

CAS NO. : 67-48-1

APPEARANCE : Yellow-brownish free flowing powder .

COMPOSITION

Choline Chloride, Roughage Carrier

Choline chloride 60% corn cob base is obtained by spraying and thoroughly mixing choline chloride liquid on a selected corn cob meal and then drying to a lower moisture content.

CHARACTERISTICS

Apparent Density : 416.5 to 480.6kg/m³
Odor : Grainy with slight amine odor

SOLUBILITY Soluble in water

SPECIFICATION

ASSAY : NLT. 60.00 %
Moisture : NMT. 03.00 %
TMA % : NMT. 00.03 %

APPLICATION AREAS :

HANDLING AND SAFETY :

Product is free-flowing when first opened but will rapidly draw moisture if left opened and exposed to the environment. Keep container well sealed and in a cool dry place after opening to avoid clumping

ACCIDENTAL RELEASE MEASURES :

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

PACKAGING :

Offered in 25 kgs / 50 kgs HDPE bags / drums.

STORAGE :

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Is slightly hygroscopic and should be stored in dry conditions in closed bags.

EINECS : 200-655-4

CHOLINE CHLORIDE 70% and 75% (Aqueous Solution)

CAS No. : 67-48-1

NATURE : It is clear colourless liquid available in 75% solution.

PHYSICAL PROPERTIES : Empirical Formula $C_5H_{14}CNO(CH_3)_3NCH_2OH$

Colour : Clear to light Amber
-not more than 120 HU
Odour : Slight amine & Chemical odour

Stability : Practically Unlimited

Solubility : Soluble in Water

Viscosity : 20 Centipoise

Platinum Cobalt : 5.30 APHA

SPECIFICATION

Purity (Min)	70.0%	75.0 %
TMA (Max)	0.03 %	0.03 %
pH in 10% Solution	6.5 - 8.0	6.5 - 8.0

APPLICATION AREAS :

Choline is formed by the reaction of Trimethylamine & Ethylene oxide with Hydrochloric Acid.

The importance of an adequate supply of dietary Choline for poultry, calves & other animals as well as in human beings is universally recognized. The most common form of Choline used to supplement diets in veterinary field is Choline Chloride. Very essential role in the metabolism of growing livestock.

STORAGE & HANDLING : Can be handled in safe manner in containers.
Can be stored for a long period in closed containers.

PACKAGING : Offered in 230 kgs. HMHDPE drums.
Flash Point : N.A.

FIRE RISK : Autoignition : N.A.
Flammable Limits : N.A.
Fire Extinguisher Media - Use extinguisher media appropriate for surrounding fire.

E C NUMBER : 200-655-4

CHOLINE CHLORIDE 98% POWDER

CAS NO. : 67-48-1

APPEARANCE : White crystalline & highly hygroscopic powder.

MOLECULAR FORMULA : $C_5H_{14}NO.Cl$

MOLECULAR WEIGHT : 139.63 g/mole

ODOR : Slight amine odor

SOLUBILITY : Soluble in water.

SPECIFICATION

ASSAY : NLT. 98.00 %

Moisture : NMT. 02.00 %

TMA % : NMT. 00.03 %

Ph Of 10% Solution : 5.0 TO 6.5

APPLICATION AREAS :

Product is free-flowing when first opened but will rapidly draw moisture if left opened and exposed to the environment. Keep container well sealed and in a cool dry place after opening to avoid clumping

ACCIDENTAL RELEASE MEASURES :

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

PACKAGING :

Offered in 25 kgs / 50 kgs HDPE bags / drums.

STORAGE AND HANDLING :

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Is slightly hygroscopic and should be stored in dry conditions in closed bags.

LABEL FIRST AID :

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. Get medical attention if irritation develops or persists.

EINECS : 200-655-4

N -METHYL - 2 - PYRROLIDONE (NMP)

(ULTRA PURE GRADE)

CAS No. : 872-50-4
NATURE : It is a Clear Colourless Liquid.
(Turns yellow on exposure to heat.)

PHYSICAL PROPERTIES

Molecular Formula : C_5H_9NO
Molecular Wt. : 99.13
Specific Gravity : 1.028 @ 25°C
Refractive Index at 20°C : 1.47
Melting Point : -24°C
Boiling Point : 202° C @ 760 mm Hg
Flash Point : 93° C
Auto Ignition Temp. : 270° C
Solubility in Water : Miscible
Stability : Stable under ordinary conditions.
Flammability Limits
LEL : 1.3 vol%
UEL : 9.5 vol%

SPECIFICATIONS

Purity (Min.) % by GC : 99.85
Water Content (Max.) % by KF. : 00.05
MMA (Max.) % by Titration : 00.005
GBL (Max.) % GC : 00.05
Other Impurities (Max.) % by GC : 00.10
Color Apha (Max.) : 20 APHA

APPLICATION AREAS :

- APPLICATIONS** : Used as a solvent in pharmaceutical synthesis because of its broad solvency.
- OIL REFINING** : Solvent for selective extraction of aromatic compound mixers and co-solvent for water resolution. Decoloring agent for oils & waxes. Extractions solvent in lube oil processing and in Natural and Synthetic Gas purification.
- OTHERS** : Solvent for paint stripping and resins. Metal finishing and PCB manufacturing. Pigment dispersant and disperser for paints and varnishes.
- STORAGE** : Mild or Stainless Steel. Store away from heat sparks, open flames, strong oxidizing agents and direct sunlight.
- PACKING** : 200 kgs. Net weight in M.S. Drums.
- HEALTH & SAFETY** : NMP is irritating to skin, eyes. In case of contact, affected areas should be washed with plenty of water. If sticky, use waterless cleaner. Inhalation should be avoided. If overcome by exposure, victim should be moved to fresh air. Give oxygen or artifical respiration as needed. Obtain emergency medical attention. Prompt action is essential.
- E C NUMBER** : 212-828-1

N-ETHYL-2-PYRROLIDONE (NEP)

CAS No. : 2687-91-4
NATURE : It is a Colourless to yellow Liquid

PHYSICAL PROPERTIES

Molecular Formula : 1 1 N O
Molecular Wt. : 113.2
Density @ 20°C,g/cm3 : 00.998
Vapour Pressure : < 1mbar
Melting Point : < -75°C
Boiling Point : 212-213°C
Flash Point : 91° C
Auto Ignition Temp. : 250° C
Solubility in Water : Miscible
Stability (qualitative) : Stable in other Organic Solvents.
Flammability Limits
LEL : 1.3 vol%
UEL : 7.7 vol%

SPECIFICATIONS

Assay (Min.) Wt % by GC : 99.50
Water Content (Max.) Wt % by KF : 00.10
MEA (Max.) % by GC : 00.10
GBL (Max.) % by GC : 00.25
Color APHA (Max.) : 30 APHA

APPLICATION AREAS :

- APPLICATIONS** : May serve as the highly effective selective solvent, the catalyst and the positive ion surface active agent.
- INDUSTRIAL** Uses in to produce the pyrrolidone series product, the oil quality purifies, the gunpowder, the coating, the dye, the heat- resisting macromolecular weight polymerization resin as well as does the rubber degreasing, the light sends the anti-etching reagent to strip the medicinal preparation, the coating launches the medicinal preparation, epoxy side excises, the acetylene, the pyrolylene extract, the natural gas desulphurization, synthetic fiber spinning medium, pigment disperser and so on.
- OTHERS** : Uses in the medicine, the agriculture chemicals intermediate and the everyday use cosmetics profession, sa well as produces profession and so on high tech attachment value high lithiumbattery. NEP can be used as a one to one replacement for NMP. NEP creates a homogeneous finish surface with smaller pigments
- STORAGE** : Store away from heat sparks, open flames, Ensure through
- AND** ventilation of stores and work areas
- HANDLING** SUBSTANCE TO AVOID STRONG ACID, Oxidizing Agent. Handle in accordance with goods industrial hygiene and safty practice
- PACKING** : 200 kgs. Net weight in M.S. Drums.
- HEALTH & SAFETY** : Harmful if swallowed, Irritating to eyes and respiratory system. Prolonged contact with the product can result in skin irritation, Remove contaminated clothing, Keep patient calm, remove to fresh air. Assist in breathing if necessary. Consult a physician, Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing isrequired additionally to the stated personal protection equipment. Wash soiled clothing immediately. In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation, develops, Wear a self-contained breathing apparatus. Suitable extinguishing media is water, dry extinguishing media, foam, carbon dioxide
- EINECS NO.** 220-250-6

GAMMA-BUTYROLACTONE

(ULTRA PURE GRADE)

CAS No. : 96-48-0
NATURE : It is a Clear Colourless Liquid free
of suspended matter

PHYSICAL PROPERTIES

Molecular Formula : $C_4H_6O_2$
Molecular Wt. : 86.1
Form : Liquid
Odour : Odourless, Faint odour
pH Value : 4-5
Boiling Point : 201-206° C
Freezing Point : -43.5° C
Auto Ignition Temp. : 455° C
Explosion Limit
LEL : 3.6% (V)
UEL : 15.6% (V)
Density : 1.13 g/cm³
Flash Point : 104° C

SPECIFICATIONS

Assay (Min.) Wt % by GC : 99.70
Water Content (Max.) Wt% by KF : 00.05
1,4-Butanediol (Max.) Wt% : 00.10
Acid as Butyric Acid (Max.) Wt % : 00.03
Color Apha (Max.) : 20

APPLICATION AREAS :

APPLICATIONS

: GBL serves as a chemical intermediate in the manufacture of all pyrrolidones.

It is used in the production of pesticides, herbicides and plant growth regulators.

GBL may be formed as an intermediate in the production of vitamins and pharmaceuticals.

Pesticides

Photochemical etching

electrolytes of small batteries of capacitors

viscosity modifiers in polyurethanes

surface etching of metal coated plastics

organic paint disbursements for water soluble inks,

pH regulators in the dyeing of wool and polyamide fibers foundry chemistry as a catalyst during curing.

Curing agents in many coating systems based on urethanes and amides

STORAGE

: It has almost unlimited shelf life in unopened containers when properly stored in a protected storage area. This product is neither explosive nor spontaneously flammable in air. Materials recommended for storage tanks are carbon steel, stainless steel and nickel.

PACKAGING

: 200 kgs. Net weight in HM HDPE Drums. & in ISO tanks.

HEALTH & SAFETY

: GBL is irritating to eyes and respiratory system. Hamful if swallowed. Not irritating to the skin. Vapor-air-mixture represents an unlikely acute hazard.

Avoid contact with Skin, Eye & Clothing.

E C NUMBER

: 202-509-5

2-PYRROLIDONE (2 - P)

CAS NO.	:	616-45-5	
NATURE	:	Clear, Colourless Liquid	
PHYSICAL PROPERTIES	:	Molecular Formula	C ₄ H ₇ NO
		Molecular Wt.	85.11
		Refractive Index at 20°C	1.4830-1.4850
		Solubility in Water	Soluble
		Flash Point	129.4°C
		Specific Gravity at 25°C	1.097 - 1.117
		Vapour Density	2.93
		Boiling Point	245°C
		Freezing Point	25°C
SPECIFICATION	:	Standard Grade	
Purity (MIN.) wt %	:	99.50	
Water Content (MAX.) %	:	00.10	
Color Apha (MAX.)	:	30	
Gamma Butyrolactone (MAX) %	:	00.10	
1,4 Butanediol (MAX) %	:	00.10	

APPLICATION AREAS :

- Pharmaceuticals
- Dye intermediates
- Stabilizer
- Printing Inks & Iodine
- Agricultural Chemicals
- Synthetic Resin
- Polyvalent Alcohol

STORAGE & HANDLING : Protect against physical damage. Store in a cool, dry well ventilated Location. Clean carbon steel is satisfactory as a material of construction for storage tanks and transfer systems, provided adequate precautions are observed to guard against rust contamination. Eliminate all sources of ignition in case of spills and leaks.

PACKING : 200 kgs. Net Wt. in Mild Steel / Galvanised Drums.

PACKING GROUP : N.A.

UN NO. : N.A.

E C NUMBER : 210-483-1

MORPHOLINE

CAS NO.	:	110-91-8	
NATURE	:	Clear, Colourless Liquid	
PHYSICAL PROPERTIES	:	Empirical Formula	C ₄ H ₉ NO
		Molecular Wt.	87.12
		Solubility in Water	Soluble
		Odor	Amine Odor
		Boiling Point	128°C
		Freezing Point	-5°C
		Flash Point	31°C
		Specific Gravity	1.001-1.004
		(@20°C g/cm ³)	
		Vapour Pressure (mm hg)	10 @ 23° C
SPECIFICATIONS	:	Purity	99.50% MIN.
		Water	0.20% MAX.
		Color (APHA)	15 MAX.

APPLICATION AREAS :

- ❖ Pharmaceuticals
- ❖ Dye Intermediates
- ❖ Paper Chemicals
- ❖ Corrosion Inhibitors
- ❖ Emulsifiers
- ❖ Curing Agents for Epoxy Resin
- ❖ Agricultural Chemicals
- ❖ Textile Chemicals
- ❖ Rubber Chemicals
- ❖ Optical Brighteners
- ❖ Plasticizers
- ❖ Photographic Chemicals

STORAGE & HANDLING : Protect against physical damage. Store in a cool, dry well ventilated location. Containers should be bonded and grounded for transfer to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipments.

PACKING : 200 Kgs. Net. Wt. in Mild Steel Drums.

IMDG GALSS : Class 3

PACKING GROU : III

UN NO. : 2054

E C NUMBER : 203-815-1

DIMETHYLFORMAMIDE (DMF)

CAS No. : 68-12-2
Appearance : Clear, colorless to slightly yellow liquid

PHYSICAL PROPERTIES

Formula : C₃H₇NO
Molecular Weight : 73.1 gm/mol
Boiling Point : 153°C
Freezing point : -61°C
Density at 20oC : 940 kg/ m³
Refractive Index at 25oC : 1.4278

SPECIFICATIONS

Assay (By GC) : ≥99.9% Min
Color(APHA) : 10 max
Methanol (By GC) : 0.005% Max
Acid Fraction (calc. as Formic Acid) : 10 mg/Kg Max
Base Fraction (calc. as Dimethylamine) : 10 mg/Kg Max
Water (By KF) : 0.03 % Max

APPLICATION AREAS :

DESCRIPTION : Dimethylformamide (DMF) is a colorless, High-boiling, polar aprotic solvent with a characteristic odor. It is stable on heating and under its distillation temperature range and is freely miscible with water, alcohols, ethers, ketones, esters, carbon disulfide and chlorinated and aromatic hydrocarbons. It is either immiscible or only partly miscible with aliphatic hydrocarbons. DMF has very little tendency to hydrolyze even at elevated temperature in presence of water. It is used in many chemical reactions which requires high solvency power and also known as universal solvent.

APPLICATION : The high solubility of organic and inorganic compounds due to the combined action of its high dielectric constant, electron donor properties and its ability to form complexes, dimethylformamide (DMF) is a preferred solvent for Pharmaceuticals, Agro Chemicals, Polymers, Petrochemicals, Dyes and Paints Industries. Its main applications are as listed below.
As a Solvents in pharmaceuticals manufacturing
As a Solvents in Acrylic Polymers manufacturing
As a feed stock for synthesis of derivatives of DMF
As a solvent in pesticides formulations

STORAGE & HANDLING : Dimethylformamide (DMF) is a non corrosive solvent and can be stored in Stainless steel tanks or HDPE Drums. DMF can be absorbed through the skin, hence proper care should be taken while handling the material . Use proper personnel protective equipments while loading and unloading the material.
General protective measures include:
Ensure work place is well ventilated
Do not leave containers lying open
Storage containers must be grounded
Always refer to the Material Safety Data Sheet (MSDS) for detailed information.

PACKING DETAILS : HDPE Drums 200 Kgs Net.
IBC Containers 900 Kgs Net
Road tankers S S tanks

EINECS NO. : 200-679-5

ACETONITRILE

CAS No. : 75-05-8
Appearance : A clear, colourless liquid.

PHYSICAL PROPERTIES

Empirical Formula : C₂H₃N
Molecular Weight : 41.05
Boiling Point : 81.6°C
Freezing point : Below -45°C
Sp. Gr. at 20°C : 0.775 - 0.785
Refractive Index at 20°C : 1.452 - 1.454
Flash Point (Closed Cup) : 2°C
Solubility in water : Soluble

SPECIFICATIONS

Purity by GC (wt. %) : 99.85% Min.
Water by K.F. (wt. %) : 0.07% Max.
Propionitrile (ppm) : 300 Max.
Acrylonitrile by GC (ppm) : 3 Max.
Free Ammonia (ppm) : 6 Max.
Acetone by GC (ppm) : 50 Max.
Acidity (wt. %) : 0.05 Max.
Colour : 10 APHA Max.

APPLICATION AREAS :

APPLICATIONS : Acetonitrile is a volatile, highly polar solvent used to extract fatty acids and animal and vegetable oils. It is used in the petrochemical industry in extractive distillation based on its selective miscibility with organic compounds.
It is used as solvent for spinning synthetic fibres and in casting and moulding plastics. In laboratories, it is widely used in high-performance liquid chromatographic (HPLC) analysis and as a solvent for DNA synthesis and peptide sequencing.

The most widely used analytical technique for acetonitrile is gas chromatography.

PACKING DETAILS : MS Drums 160 Kgs Net.

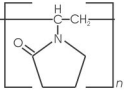
IMDG CLASS : 3

UN CODE : 1648

PHARMAPURE POVIDONE® (PVP K-25) IP/BP/EP/USP GRADE

CAS NO.	:	9003-39-8
DESCRIPTION	:	White or Yellowish Free flowing powder

PHYSICAL PROPERTIES

CHEMICAL FORMULA	:	$[C_6H_9NO]_n$
MOLECULAR FORMULA	:	
COLOUR	:	White or Slight Yellowish
ODOR	:	Slightly characteristic odor
AUTO IGNITION	:	≈ 440°C
FILTRATION TEST	:	1 Kg < 6 min

SPECIFICATIONS

APPEARANCE	:	White or Yellowish White Powder
IDENTIFICATION	:	By Chemical tests B,C,D,E & F
APPEARANCE OF SOLUTION	:	A 5% solution is clear and not more intense than Reference solution B6, BY6 or R6
pH OF 5% SOLUTION	:	3.0-5.0
K- VALUE	:	22.5 - 27.0
SOLUBILITY	:	Soluble in Water
WATER CONTENT (BY KF)	:	≤5.0 %
ALDEHYDES	:	Max. 500 PPM
PEROXIDES	:	Max. 400 PPM
HYDRAZINE	:	Max. 1 PPM
N-VINYL PYRROLIDONE	:	Max. 10 PPM (0.001%)
PYROLIDONE (IMPURITY B)	:	Max. 3.0%
SULPHATED AS CONTENT	:	≤0.10%
NITROGEN CONTENT	:	11.5-12.8%
HEAVY METALS	:	NMT. 10 PPM
MICROBIAL QUALITY	:	Must Comply
FORMIC ACID	:	NMT. 0.5%
LEAD	:	NMT. 10 PPM

APPLICATION AREAS :

PVPK-25 is being used in many Pharmaceuticals Industries :

1. Binder for tablets. Granules and hard gelatin capsules since it is readily soluble in water and many organic solvents.
2. Used as tablet coating agent.
3. Used in preparation of suspensions, dry syrups etc.
4. Used in the formulation of ophthalmic solutions.
5. Used in the manufacture of blood purifying membranes.

STORAGE CONDITIONS

Keep the container tightly closed at moderate temperature. Keep the container at well ventilated area and away from heat. Material is Hygroscopic in Nature.

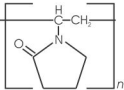
PACKING SIZE

25/50 Kgs in Fiber / HDPE drums

PHARMAPURE POVIDONE® (PVP K-30) IP/BP/EP/USP GRADE

CAS NO.	:	9003-39-8
DESCRIPTION	:	White or Yellowish Free flowing powder

PHYSICAL PROPERTIES

CHEMICAL FORMULA	:	$[C_6H_9NO]_n$
MOLECULAR FORMULA	:	
COLOUR	:	White or Slight Yellowish
ODOR	:	Slightly characteristic odor
AUTO IGNITION	:	≈ 440°C
FILTRATION TEST	:	1 Kg < 6 min

SPECIFICATIONS

APPEARANCE	:	White or Yellowish White Powder
IDENTIFICATION	:	By Chemical tests B,C,D,E & F
APPEARANCE OF SOLUTION	:	A 5% solution is clear and not more intense than Reference solution B6, BY6 or R6
pH OF 5% SOLUTION	:	3.0-5.0
K- VALUE	:	27.0 - 32.4
SOLUBILITY	:	Soluble in Water
WATER CONTENT (BY KF)	:	≤ 5.0 %
ALDEHYDES	:	Max. 500 PPM
PEROXIDES	:	Max. 400 PPM
HYDRAZINE	:	Max. 1 PPM
N-VINYL PYRROLIDONE	:	Max. 10 PPM (0.001%)
PYROLIDONE (IMPURITY B)	:	Max. 3.0%
SULPHATED AS CONTENT	:	≤ 0.10%
NITROGEN CONTENT	:	11.5-12.8%
HEAVY METALS	:	NMT. 10 PPM
MICROBIAL QUALITY	:	Must Comply
FORMIC ACID	:	NMT. 0.5%
LEAD	:	NMT. 10 PPM

APPLICATION AREAS :

APPLICATIONS

PVPK-30 is being used in many Pharmaceuticals Industries :

1. Binder for tablets. Granules and hard gelatin capsules since it is readily soluble in water and many organic solvents.
2. Used as tablet coating agent.
3. Used in preparation of suspensions, dry syrups etc.
4. Used in the formulation of ophthalmic solutions.
5. Used in the manufacture of blood purifying membranes.

STORAGE CONDITIONS

Keep the container tightly closed at moderate temperature. Keep the container at well ventilated area and away from heat. Material is Hygroscopic in Nature.

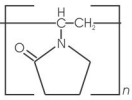
PACKING SIZE

25/50 Kgs in Fiber / HDPE drums

PHARMAPURE POVIDONE® (PVP K-30) TECHNICAL GRADE

CAS NO.	:	9003-39-8
DESCRIPTION	:	White or Yellowish Free flowing powder

PHYSICAL PROPERTIES

CHEMICAL FORMULA	:	$[C_6H_9NO]_n$
MOLECULAR FORMULA	:	
COLOUR	:	White or Slight Yellowish
ODOR	:	Slightly characteristic odor
AUTO IGNITION	:	≈ 440°C
FILTRATION TEST	:	1 Kg < 6 min

SPECIFICATIONS

K- VALUE	:	28-32.8
SOLID CONTENT	:	≥ 95.0 %
SOLUBILITY	:	Soluble in Water
WATER CONTENT (BY KF)	:	≤ 5.0 %
pH OF 5% SOLUTION	:	3.0-7.0
VINYL PYRROLIDONE CONTENT	:	≤ 0.10 %
SULPHATED AS CONTENT	:	≤ 0.10 %
NITROGEN CONTENT	:	11.5-12.8 %
HEAVY METALS/LEAD	:	≤ 10 PPM

APPLICATION AREAS :

PVP is being used in many Industries such as Pharmaceuticals, Cosmetics and Agrochemicals

Besides those applications PVP is also being used in technical application such as pesticides, detergents, membranes, shampoos, paints, adhesives, photographic plates and printing inks.

STORAGE CONDITIONS

Keep the container tightly closed at moderate temperature. Keep the container at well ventilated area and away from heat. Material is Hygroscopic in Nature.

PACKING SIZE

25/50 Kgs in Fiber / HDPE drums

A SUBSIDIARY OF



AMINES LIMITED

Manufacturers of Methyl Amines, Ethyl Amines,
other derivatives of Amines & Speciality Chemicals.

We believe in the smile On our customer's face !



SPECIALITY CHEMICALS PVT. LTD.

ETHYLENEDIAMINE (EDA) CAS # 107-15-3

PIPERAZINE CAS # 110-85-0

DIETHYLENE TRIAMINE (DETA) CAS # 111-40-0

AMINOETHYLPIPERAZINE (AEP) CAS # 140-31-8



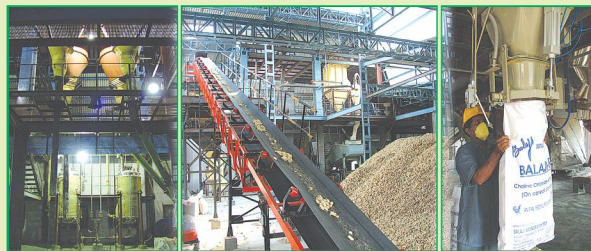
ANIMAL SUPPLEMENTARY FEED

Choline Chloride 60% Corn Cob

Choline Chloride 70% Solution

Choline Chloride 75% Solution

Choline Chloride 98% Powder



Balaji

AMINES LIMITED



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