

CODEX 4503
MATERIAL SAFETY DATA SHEET

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- **Product identifier** :
 - Chemical Name : Diethylene triamine pentamethylene phosphonic acid
 - Molecular formula : $C_9H_{28}N_3O_{15}P_5$
 - Chemical class : Organic liquid
 - Trade name : CODEX 4503
 - Synonyms :
- **Name of manufacturer** :

CORPORATE HEAD OFFICE :

Excel Industries Limited
184-87, S.V. Road
Jogeshwari (West)
Mumbai - 400 102
Maharashtra, INDIA
Emergency Tel. : +91 22 6646 4200, 2678 8258
Fax : +91 22 2678 3508

MANUFACTURED AT :

Excel Industries Limited
Plot No. 112, MIDC Industrial Area
Dhatav, Roha
District - Raigad 402116
Maharashtra, INDIA
Emergency Tel. : +91 2194 264004, 264005
Fax : +91 2194 263703

- **Product use** : Used in detergents, peroxide stabilizers, industrial & institutional cleaners, general purpose scale inhibitor

SECTION 2 : COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	CAS No.	%	EC / EINECS No.	Symbol	R / S Phrases
Diethylene triamine pentamethylene phosphonic acid	15827-60-8	48-50% active acid	239-931-4	Xi, C	R41, R37/38 S26, S36/37/39
Hydrochloric acid	7647-01-0	12-14%	231-595-7	Xi, C	R34, R37
Water	7732-18-5	35-40%	231-791-2	-----	-----

Note: See Section 16 for full text of R & S phrases mentioned above.

SECTION 3 : HAZARDS IDENTIFICATION

- **Potential hazards** : Irritant, Corrosive
- **Potential health effects** : Irritant, Corrosive
- **Relevant route of exposure** :
 - Skin contact : Highly irritant to skin
 - Eye Contact : May cause eye burns. Risk of serious damage to eyes.
 - Inhalation : Irritation of respiratory system, coughing.
 - Ingestion : May be harmful if swallowed



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- R-phrases : R41, R37/38
- S-phrases : S26, S36/37/39
- NFPA Code : H=3; F=0; R=1
- Environmental effects : ----
- Hazard symbols : Xi, C



SECTION 4 : FIRST AID MEASURES

- Eyes : Immediately flush eyes with plenty of water for atleast 15 minutes. Eyelids should be held apart during the flushing. Seek medical attention immediately.
- Skin : Remove contaminated clothing. Wash affected area with large amounts of water & soap. Seek medical attention immediately. If the clothing is contaminated, it should be laundered.
- Inhalation : Remove exposed person to fresh air. If breathing has ceased, give artificial respiration immediately. Seek medical attention immediately.
- Ingestion : First rinse mouth. Give large amount of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention immediately.
- Note to Physician : Treat symptomatically

SECTION 5 : FIREFIGHTING MEASURES

- HAZCHEM code : ----
- Hazardous combustion products : Carbon oxides, Phosphorus oxides
- Conditions under which flammability could occur : Heat
- Extinguishing media : Water, Dry chemical powder, Dry sand , Foam, CO₂
- Unsuitable fire extinguishing media : None
- Sensitivity to explosion : No
- Fire fighting procedure : Do not enter the area without proper protection.
- Special protective equipment for the fighters : Do not breathe fumes. Wear self-contained breathing apparatus and full protective clothing. Equipment should be thoroughly decontaminated after use.



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SECTION 6 : ACCIDENTAL RELEASE MEASURES

- Personal precautions : Avoid contact with material. Use respiratory & personal protection recommended in Section 8.
- Environmental precautions : Prevent mixing with water bodies, sewers.
- Procedures for dealing with release or spill (Major/Minor) : Construct temporary dykes of sand, earth, dirt to prevent spreading of material. Absorb on sand, suitable absorbents or inert material. Carefully collect material in containers for disposal. Use respiratory equipment & personal protective clothing. Dispose as per instructions mentioned in Section 13.
- Additional instructions : After clean up operations, decontaminate & launder all protective clothing and equipment before storing & reusing

SECTION 7 : HANDLING AND STORAGE

HANDLING :

- **Safe handling practices and equipment :** Good industrial practice in housekeeping and personal hygiene should be followed. Avoid contact with eyes, skin and clothing. Ensure good ventilation at workplace.
- **Instruction for fire & explosion protection:** No smoking.

STORAGE :

- **Appropriate storage practices/ requirements:** Store in cool, dry, well-ventilated area away from heat and ignition sources. Keep containers closed. Isolate from incompatible material & conditions. Protect against physical damage. Check regularly for leaks.
- **Material of construction of containers:** HDPE carbuoys, HMHDPE drums

SECTION 8 : EXPOSURE CONTROL / PERSONAL PROTECTION

- **Occupational exposure limit values / Biological limit values:** No data available
- **Applicable control measures, including engineering controls:** Good industrial practice in housekeeping should be followed. Ensure adequate ventilation of workplace & storage areas. Provide eyewash facility & safety shower.
- **Industrial Hygiene Controls:** Good personal hygiene practices should be followed. Avoid contact with eyes, skin and clothing. Wash hands before breaks and after work. Do not eat, drink, smoke in the workplace. Use personal protective equipment.
- **Personal protective equipment for each exposure route (type & MOC):**
 - Eyes : Safety goggles, Face shield.
 - Skin : PVC / Rubber gloves.
 - Clothing : Chemical resistant apron
 - Foot : Safety shoes / Gumboots
 - Respiratory protection : If risk of overexposure exists wear respirator with appropriate filter.



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SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : Liquid
- Appearance : Clear brown liquid
- Odour : Irritating
- Boiling point : > 100°C
- Freezing/Melting point : < -10°C
- Specific gravity : 1.42 ± 0.02 @ 25°C
- pH : < 2 (1% solution)
- Solubility in water : Miscible in water
- Flash point (with method) : Not applicable
- Upper explosive limit in air : Not applicable
- Lower explosive limit in air : Not applicable
- Auto ignition temperature : Not applicable

SECTION 10 : STABILITY AND REACTIVITY

- Chemical stability : Generally stable under normal conditions of handling and storage.
- Conditions to avoid : Heat
- Incompatibility with other materials : Reacts with oxidising substances, alkalies
- Hazardous decomposition products : Gives off hydrogen by reaction with metals. Oxides of carbon, Oxides of phosphorus
- Hazardous polymerization : None
- Effect of weather (Humidity/ oxygen/ CO₂) : None

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicology data:

- Skin : Dermal LD50 (Rat) - 7980 mg/kg
- Ingestion : Oral LD50 (Rat) - 7186 mg/kg
- Inhalation : No data available
- Irritancy : Irritation of skin, eyes, respiratory system
- Sensitization : No data available
- Carcinogenicity : No data available
- Reproductive toxicity : None
- Teratogenicity : None
- Mutagenicity : None
- Name of toxicologically synergistic products : No data available

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SECTION 12 : ECOLOGICAL INFORMATION

- Ecotoxicity:
 1. Aquatic toxicity :
EC50 / Daphnia magna / 48H : 242 mg/l
 2. Toxicity to algae :
EC50 / Selenastrum capricornutum / 96H : 2 mg/l
 3. Toxicity to fish :
LC50 / Rainbow trout / 96H : > 180 mg/l LC50 / Bluegill sunfish / 96H : 758 mg/l
- Mobility : No data available
- Persistence and degradability in soil/
water : Not readily biodegradable
T ½ : 45 days
- Bioaccumulation potential : No expected to bioaccumulate
- Other adverse effects (ODP, GWP, etc). : No data available

SECTION 13 : DISPOSAL CONSIDERATION

- **Waste disposal information of product & contaminated packaging:** Spill and waste disposal procedures approved by state and local authorities must be observed. Labels should not be removed from containers until they have been cleaned and decontaminated. Decontaminate the container taking suitable precaution considering hazard before reuse or recycle and dispose off as per local rules. Do not use empty containers for storing food.

SECTION 14 : TRANSPORT INFORMATION

Regulatory information	UN No.	Proper shipping name	UN Class & Subs. Haz class	Packaging group	Label	Additional information
IMDG	3265	Corrosive liquid, Acidic, Organic, N.O.S.(Diethylene triamine pentamethylene phosphonic acid)	8	III		
ADR/ RID	3265	Corrosive liquid, Acidic, Organic, N.O.S.(Diethylene triamine pentamethylene phosphonic acid)	8	III		
US-DOT	3265	Corrosive liquid, Acidic, Organic, N.O.S.(Diethylene triamine pentamethylene phosphonic acid)	8	III		
ICAO/ IATA	3265	Corrosive liquid, Acidic, Organic, N.O.S.(Diethylene triamine pentamethylene phosphonic acid)	8	III		

SECTION 15 : REGULATORY INFORMATION

- National laws/ Regional laws:-
 - Europe - EC / EINECS No. - 239-931-4
- Hazard Symbol - Xi



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SECTION 16 : OTHER INFORMATION

Full text of R& S phrases given below:-

- R41 - Risk of serious damage to eyes
- R37/38 - Irritating to respiratory system and skin
- R34 - Causes burns
- R37 - Irritating to respiratory system
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

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