

# Material Safety Data Sheet


Product Name : CHEMAX A-300

Rev. No./Date : #2 / 2008. 4.11

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	CHEMAX A-300	PRODUNCT NO.	MS-376
GENERAL FEATURE	It prevents corrosion of the material such as carbon steel by adjusting the pH of Boilers Steam and Condensate		
USE	Boiler Condensate system pH Conditioning Agents		
COMPANY NAME	PRIME TECH INTERNATIONAL CO., LTD.		
ADDRESS	GYEONGGI TECHNOPARK, sa-1 DONG, Sangnok-gu, Ansan-si, Gyeonggi-do, korea		
TELEPHONE NO.	82-31-500-4560		
FAX NO.	82-31-500-4562		
DEAPRTMENT	Technical & Research H./Q		

## SECTION 2. HAZARDS IDENTIFICATION

HAZARDS ICLASSIFICATION	Flammable liquids (Classification 3) Acute toxicity (Classification 3) Skin corrosive substances (Classification 1)			
WANNING SIGN CLASSIFICATION INCLUDING PRECATION LETTER				
	SIGNAL WORD		HAZARD	
	HAZARD LETTER		Flammable liquids or vapors Toxic if swallowed	
	PRECAUTION LETTER	PREVENTION	Wash hands thoroughly after handling.	
		RESPONSE		
		STORAGE	Keep it hermetically in dry place to avoid dampness and water.	
	DISPOSAL	Discard it according to the rule as specified.		
• OTHER HAZARDS	NEFA PATING (SCALE : 0~4)	HEALTH	FIRE	REACTIVITY
• HAZARDS	Cyclohexylamine	3	3	0
	Ethanolamine	3	2	0

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**KOSMO E&T Co., Ltd.**  
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CLASSIFICATION				
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## SECTION 3. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS	OTHER NAMES	CAS NUMBER	MOLECULAR FORMULA	PERCANTAGE
Cyclohexylamine		108-91-8	C <sub>6</sub> H <sub>11</sub> NH <sub>2</sub>	17~~23
Ethanolamine		141-43-5	H <sub>2</sub> HCH <sub>2</sub> CH <sub>2</sub> OH	Trade Secrets
Water		7732-18-5	H <sub>2</sub> O	

## SECTION 4. FIRST AID MEASURES

EYE CONTACT	Irrigate the eye with plenty of water for 15 minutes, take a medical action in the event of inflammation.
SKIN CONTACT	<ul style="list-style-type: none"> <li>• Immediately take off contaminated clothing and shoes.</li> <li>• Wash immediately with plenty of water &amp; soap until completely removed.</li> </ul>
INHALATION	Patient should be moved to well-ventilated place first. If his recovery is quite slow, take a medical action.
INGESTION	<ul style="list-style-type: none"> <li>• Prevent the patient's vomit.</li> <li>• Bow the head down the bottom to prevent vomiting.</li> <li>• In case of unconscious, take an action of free airway. And if there are heart rates or pulse rates, take a medical action immediately.</li> <li>• If a patient is conscious, rinse mouth with water and then give water of around 0.5L immediately and drink 1 cup of water after every ten minutes repeatedly with medical treatment.</li> </ul>
PRECAUTION DOCTORS	<ul style="list-style-type: none"> <li>• For inhalation, consider supply of oxygen.</li> <li>• Avoid gastric lavage or vomiting</li> </ul>
MAIN SYMPTOMS OF ACUTE & DELAY	Not available.

## SECTION 5. FIRE FIGHTING MEASURES

RIGHT FIRE EXTINGUISHER	Water spray, Bubble, Powder & CO <sub>2</sub> fire extinguisher
BIG FIRE	Use general the fire extinguishing agent or supply the water with fine water spray.
SPECIAL HAZARD BY CHEMICAL	Pyrolysate : Carbon compounds, Nitrogen compounds

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	Fire and Explosion Hazards : Intermediate fire hazard.
PRECAUTION AND PROTECTIVE EQUIPMENT ON FIRE FIGHTING	<ul style="list-style-type: none"> <li>• If it can be done without risk, move container from fire area.</li> <li>• Take care not to slip</li> <li>• Wear the Self-contained breathing apparatus that has higher pressure than atmospheric pressure with fire-retardant clothing.</li> </ul>

## SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION	Use personal protective equipment & mask to direct contact.
ENVIRONMENTAL PRECAUTIONS	<ul style="list-style-type: none"> <li>• Flush the contaminated area out with clean water and remove the residue by brushing.</li> <li>• Water facility should be installed near the workplace for the age thickening of leaked chemical.</li> </ul>
METHODS FOR CLEANUP	<ul style="list-style-type: none"> <li>• Sweep up the leaked chemical into the removal container.</li> <li>• Wash immediately with plenty of water or commit the process to company handling the disposal.</li> <li>• If there remain the slippery things, more use of <b>dry sweeping material</b> should be needed.</li> </ul>

## SECTION 7. HANDLING AND STORAGE

HANDLING	<ul style="list-style-type: none"> <li>• Do not eat, drink or smoke whilst handling the product.</li> <li>• Protecting mask, safety goggles, protective clothing(long sleeve), rubber glove must be worn to avoid the direct contact.</li> <li>• Wash hands after use.</li> <li>• Remove contaminated clothing immediately and launder before reuse.</li> <li>• Keep away from sources of ignition and avoid creating dust.</li> </ul>
STORAGE	<ul style="list-style-type: none"> <li>• Keep out of direct light except for time of use and store it in dark and fresh air to isolate from flammable material.</li> </ul>

## SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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CHEMICAL, BIOLOGICAL EXPOSURE STANDARDS		Cyclohexylamine : TWA : 40mg/m <sup>3</sup> Ethanolamine : TWA : 8mg/m <sup>3</sup> , STEL : 15mg/m <sup>3</sup>
ENGINEERING CONTROLS		Not exhibited.
PERSONAL PROTECTION	RESPIRATORY PROTECTION	RESPIRATORY PROTECTION
	EYE, HAND PROTECTION	NIOSH official respiratory organs.
	SKIN, BODY PROTECTION	Safety goggles and rubber gloves. Not use contact lens

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Colorless or pale yellow liquid
ODOR	Odourless
pH	12.9 ±1.0 (NEAT, 25°C)
SPECIFIC GRAVITY	0.99 ±0.05 (20°C)
SOLUBILITY	Able to dilute any ratio
BOILING POINT	Not exhibited.
FREEZING POINT	Not exhibited.
EXPLOSIVE	None
OXIDATIVE	n/a
VAPOR PRESSURE	Similar to water
VAPOR DENSITY	Not exhibited..
DISTRIBUTION COEFFICIENT	n/a
VISCOSITY	Not exhibited.
FLASH POINT	Cyclohexylamine : 82.4F (28°C) Ethanolamine : 185F (85°C)
AUTO-IGNITION TEMPERATURE(°C)	Not Measured.
HIGH/LOW FLAMMABILITY LIMITS (EXPLOSION UPPER/	Not Measured.

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LOWER LIMIT)

## SECTION 10. STABILITY AND REACTIVITY

CHEMICAL REACTIVITY	Stable at ambient temperature and normal pressure.
CONDITIONS TO AVOID	<ul style="list-style-type: none"> <li>• Possible to accumulate the dangerous gas in closed space.</li> <li>• May react to ignition source violently.</li> <li>• Acid, combustible materials, oxidizing agents.</li> </ul>
HAZARDOUS DECOMPOSITION PRODUCTS	Pyrolysis or Combustion product : CO <sub>2</sub> , CO, NOx
HAZARDOUS MATERIAL PRODUCTION POSSIBILITY ON REACTION	Hazardous polymerization is not reported..

## SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY	Cyclohexylamine : LD <sub>50</sub> = 11mg/kg (Oral, Rat) Ethanolmine : LD <sub>50</sub> = 1720mg/kg (Oral, Rat)
ACUTE INHALATION TOXICITY	Not exhibited.
ACUTE DERMAL TOXICITY	Not exhibited.
SUB-ACUTE TOXICITY	Not exhibited.
CHRONIC TOXICITY	Not exhibited.
MUTAGENIC TOXICITY	Not exhibited.
GENETICAL EFFECTS (REPRODUCTIVE TOXICITY)	Not exhibited.
CARCINOGENICITY	Not exhibited.
OTHER INFORMATION ON HEALTH EFFECTS	Not exhibited.

## SECTION 12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY	Cyclohexylamine : fish toxicity (LC <sub>50</sub> =44mg/L (96hr, Rainbow trout) Ethanolmine : fish toxicity (LC <sub>50</sub> >300mg/L (96hr, Bluegill_Lepomis macrochirus)
RESIDUE AND RESOLVABILITY	Not exhibited.

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BIOACCUMULATION	Not exhibited.
EARTH MOBILITY	Not exhibited.
OTHER INFORMATION ON HARZARD	Not exhibited.

## SECTION 13. DISPOSAL CONSIDERATIONS

METHODS OF DISPOSAL	Storing container has to be disposed by the waste disposal company recognized by local government Head. The product is incinerated or can be used for soil stabilizer.
DISPOSAL CONSIDERATIONS	When incinerating, No residue have to be left in the container.

## SECTION 14. TRANSPORT INFORMATION

UN NUMBER	Not exhibited.
UN SHIPPING NAME	Not exhibited.
TRANSPORT HAZARD CLASS	Not exhibited.
CONTAINER CLASS	Not exhibited.
MARINE POLLUTANS	Not exhibited.
SPECIAL SAFETY MEASURE ABOUT TRANSPORT NEEDED FOR USER	Not exhibited.

## SECTION 15. REGULATORY INFORMATION

REGULATION BY OCCUPATION SAFETY AND HEALTH ACTS	Not exhibited.
REGULATION BY TOXIC CHEMICALS CONTROL ACTS	Not exhibited.
REGULATION BY SAFETY CONTROL OF DANGEROUS SUBSTANCES ACTS	Not exhibited.
REGULATION BY WASTES CONTROL ACTS	Not exhibited.
REGULATION BY OTHER DOMESTIC AND INTERNATIONAL	Not exhibited.

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## SECTION 16. OTHER INFORMATION

SOURCE OF DATA

- The MERCK HANDBOOK, 12<sup>th</sup> EDITION(1996)
- Inventory of Existing Chemical Substances – Korea Toxic Management Association
- Korea Occupational Safety and Health Agency - MSDS

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