better products for a cleaner environment

KLEN 897
Heavy Duty Descaler

Product Description
KLEN 897 is a heavy duty acid based rust and scale remover. It is used to remove scale from a wide range of metal equipment & surfaces.

KLEN 897 contains corrosion inhibitors that effectively remove hard scales and metal oxide deposits from surfaces without attacking the base metal itself.

Areas of Use
For use on boilers, condensers, evaporators, heat exchangers, calorifiers, diesel engine cooling systems, air coolers, sea water sides, etc

Special Features
- Corrosion inhibitors for protection of treated surface.
- High concentration for economical and effective performance.

Directions for Use
- Dilute ***KLEN 897*** with water in portion 1: 5. Duration may vary, general guidelines are:

  For removing hard scales: 24 to 36 hours
  De-rusting: 2 to 4 hours
- System should be vented at highest point to release gases produced during descaling.
- Solution may be warmed (not exceeding 40°C) to improve efficiency of descaling process.
- If solution concentration drops to less than ½ of initial concentration, add another portion 1:10.
- Rinse system thoroughly with water and drain completely after cleansing.
- To neutralize remaining traces of acid, add 2-3% solution of ***KLEN 1101*** to circulate for approximately 2 to 4 hours.

Precautions
Corrosive liquid! A pair of suitable gloves should be worn when using product. Avoid all skin and eye contact. Wash affected areas with plenty of water.

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SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product Identifier: KLEN 897

Other means of identification: Heavy Duty Descaler

Date of SDS: 1 January 2014

Recommended use and restriction on use: For use on boilers, condensers, evaporators, heat exchangers, calorifiers, diesel engine cooling systems, air coolers, sea water sides, etc.

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SECTION 2 - HAZARDS IDENTIFICATION

GHS classification: Acute toxicity: Oral: Category 3;
Skin irritation: Category 1; Eye irritation: Category 1

GHS label elements: Pictogram: Signal word: Danger

Hazard statements: H301: Toxic if swallowed
H314: Causes skin burns & eye damage

Precaution statements: P233: Keep container tightly closed.
P280: Wear protective gloves and clothing.

SECTION 3 - COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Identification	Component & Composition	Chemical Formula	CAS NO.	EC NO.
Hydrochloric Acid	< 9.0 %	HCl	7647-01-0	231-595-7
Amine	< 1.0%	Mixture	NA	NA
Water	< 90.0 %	H_2O	7732-18-5	231-791-2

SECTION 4 – FIRST AID MEASURES

Inhalation: Move to area of fresh air. If breathing has stopped, artificial respiration should be started. Oxygen may be administered if available. Call a physician. Never give anything by mouth to an unconscious person.

Skin contact: Wash with large amounts of soap and water. If irritation persists, consult a physician.

Eye contact: Flush with cool water for at least 15 minutes. Then consult a physician immediately.

Ingestion: Induce vomiting. Dilute by drinking water. Call a physician immediately.

Notes to Physicians: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media: Water, dry chemical, fog and foam.

Specific hazards arising from the chemical: Burning can produce carbon dioxide, carbon monoxide and possibly irritating fumes

Special protective actions for fire fighters: Fire fighters may be exposed to the products of combustion should wear a self-contained breathing apparatus with full protective equipment.

SECTION 6 - ACCIDENTIAL RELEASE MEASURE

Personal precautions, protective equipment, and emergency measure: Use proper protective equipment (chemical protection suit, gloves, goggles, mask, etc).

Environmental precautions: Chemical substance should not be released into the environment (water, soil).

Methods and materials for containment and cleaning up: Safely stop discharge. Contain material, as necessary, with dike or barrier. Stop material from contaminating soil or from entering sewers or bodies of water. Provide optimum ventilation. Cover spills with absorbent clay, sawdust, inert material, soda ash, slaked lime and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

SECTION 7 - HANDLING AND STORAGE

Precaution for safe handling: Handle all containers carefully. Do not throw or roll on the ground to prevent damage to containers. No other special precautions are needed for this product, as it is a mixture. Follow good manufacturing and handling practices. Wash thoroughly after handling, especially before eating and drinking, Wash contaminated goggles, face-shield, and gloves. Launder contaminated clothing before re-use.

Conditions for safe storage, including any incompatibilities: This product is a corrosive liquid. Store in cool, dry, well-ventilated area at room temperature. Keep away from strong alkalis and oxidizing agents especially chlorine releasing agents. Do not re-use empty container for food, clothing or products for human or animal consumption or where skin contact can occur.

SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION

Control parameters/ Occupational exposure limits: **ACGIH - TLV:** Provide suitable personal protective equipment and/or ventilation to maintain exposure below TLV levels.

Appropriate engineering control measures: Local exhaust ventilation usually required, when vapours, mist, or dusts can be released.

Personal Protection: Use the protective equipment such as rubber/PVC gloves; protective glasses if splashing is anticipated.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odour:	Light amber liquid with no distinct odour.
Solubility in water:	Complete.
Boiling Point:	100 ^{0} C
Specific Gravity:	1.040 +/- 0.01 g/cm^{3}
PH:	0 to 2.0
Flash Point (T.C.C.):	None to boiling **Flammable Limits - Upper:** Not applicable **Lower:** Not applicable
Vapour Pressure:	Not determined
Vapour Density:	Not determined

SECTION 10 - STABILITY AND REACTIVITY

Reactivity/ In compatible materials:	Strong alkalis and oxidizing materials.
Chemical stability:	Stable under normal temperature and pressure.
Possibility of hazardous reaction:	Will not occur.
Condition to avoid:	Not applicable

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute toxicity: Oral:	Ingestion of high amount of product is fatal.
Skin or eye irritation:	This product contains Acidic material that will cause burns and intense irritation to eyes and/or skin.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity:	Concentrations with a pH value of 6.0 or lower especially in fresh water may be fatal to fish and other aquatic organism. Can cause damage to aquatic plants and vegetation.
Persistence and degradability:	Product degrades readily by reaction of carbon dioxide in the air as well as decomposition by microorganism.
Bioaccumulative potential:	It is soluble in water and does not bio-accumulate.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal method: Dispose off in an approved waste facility according to local regulations.
It is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) Re-cycle or rework, if feasible (2) Incinerate at an authorized facility (3) Treat at an acceptable waste treatment facility.

SECTION 14 – TRANSPORT INFORMATION

This material is non-regulated and no special requirement is necessary.

SECTION 15 – REGULATORY INFORMATION

International regulation:

Classification:	This product contains hydrochloric acid as an ingredient that is classified as Corrosive under Classification.	
Risk phrases:	R28	Very toxic if swallowed
	R34	Causes burns
Safety phrases:	S07	Keep container tightly closed
	S18	Handle and open container with care
	S50	Do not mix with oxidizing materials

SECTION 16 – OTHER INFORMATION

Hazard Rating: HMIS (Hazardous Materials Information System)
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 1
0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Extreme