

Exelon Nuclear  
Limerick Generating Station  
P.O. Box 2300  
Pottstown, PA 19464

www.exeloncorp.com

NPDES PA 00051926

July 29, 2005

Ms. Jennifer Fields, P.E.  
Chief, Permits Section  
Water Management Program  
Department of Environmental Protection  
Lee Park, Suite 6010  
555 North Lane  
Conshohocken, PA 19428

Subject: Water Treatment Additive For Building Chiller Chemical Cleaning

Reference: LGS Industrial Waste NPDES Permit # PA00051926

Dear Ms. Fields:

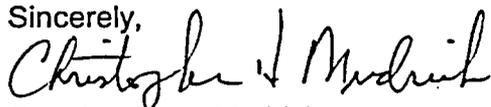
Limerick Generating Station is requesting the addition of Kleen AC9500, a dry mineral scale deposit removal agent, to the list of approved chemicals (Attachment 1). Kleen AC9500 would be utilized to remove scale that has accumulated on the administrative building chiller/cooling system (cooling tower fill and chiller heat exchanger tubes). Approximately 100-150 pounds of this product would be manually metered into 300 to 500 gallon capacity cooling system, resulting in a 3.5% solution. The number of cleaning applications will be determined by an effectiveness review conducted at the end of each cycle.

Ultimately, after product exhaustion, the chiller cooling tower will be drained and thoroughly flushed with fresh water. The normal system drain path is to the Holding Pond, which discharges through Outfall 201, and finally to the cooling tower blowdown header to Outfall 001 (Schuylkill River).

The above application rate for a three-cycle evolution would result in a concentration of 126 ppm in the Holding Pond, based on an overflow level volume of 430,000 gallons.

Please advise us of the acceptability of this proposed process for chiller chemical cleaning. If you have any questions on this matter, please feel free to contact Mr. Bob Alejnikov of my staff at 610-718-2513.

Sincerely,



Christopher H. Mudrick  
Plant Manager-LGS  
Exelon Generation Company, LLC

Attachment: Material Safety Data Sheet-Kleen AC9500

cc: S. Collins, Region 1 Administrator, USNRC  
S. Hansell, Resident Inspector, USNRC  
Document Control Desk, USNRC, Wash. DC

C 001

bcc: R. DeGregorio – GML 5-1  
C. Mudrick – GML 5-1  
T. Tierney – SSB 2-3  
M. Audette – SSB 2-3  
R. Alejiko – SSB 2-3  
T. Siglin – KSA 3N  
R. Kreider – SSB 2-4  
N. Chand – SSB 3-2

GE Betz, Inc.  
4636 Somerton Road  
Trevose, PA 19053  
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 06-JUN-2002

**EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940**

---

## 1 PRODUCT IDENTIFICATION

PRODUCT NAME:

**KLEEN AC9500**

PRODUCT APPLICATION AREA:

**A BETZDEARBORN PRODUCT**

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation. This product is subject to the Pennsylvania and New Jersey Worker and Community Right to Know Law.

### HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
5329-14-6	SULFAMIC ACID (AMIDOSULFONIC ACID) Corrosive (eyes); irritant (skin)
107-21-1	ETHYLENE GLYCOL Liver, kidney and blood toxin; CNS depressant; animal teratogen (at high oral doses)
112945-52-5	SILICON DIOXIDE, SYNTHETIC, FUMED (AMORPHOUS SILICA) Nuisance particulate

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at Pennsylvania thresholds for carcinogens.

### NON-HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
7732-18-5	WATER

## 3 HAZARDS IDENTIFICATION

\*\*\*\*\*  
**EMERGENCY OVERVIEW**

**DANGER**

May cause moderate irritation to the skin. Corrosive to the eyes.  
Dusts cause irritation to the upper respiratory tract.

DOT hazard: Corrosive to skin  
Emergency Response Guide #154  
Odor: Slight; Appearance: Colorless To Red, Granules

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide or foam--Avoid water if possible.

\*\*\*\*\*  
**POTENTIAL HEALTH EFFECTS**

**ACUTE SKIN EFFECTS:**

May cause moderate irritation to the skin.

**ACUTE EYE EFFECTS:**

Corrosive to the eyes.

**ACUTE RESPIRATORY EFFECTS:**

Primary route of exposure; Dusts cause irritation to the upper respiratory tract.

**INGESTION EFFECTS:**

May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

**TARGET ORGANS:**

Prolonged or repeated exposures may cause primary irritant dermatitis.

**MEDICAL CONDITIONS AGGRAVATED:**

Not known.

**SYMPTOMS OF EXPOSURE:**

Inhalation of dusts may cause irritation and/or burns to the respiratory tract. Skin contact can cause moderate irritation to burns (dependent on length of exposure).

**4 FIRST AID MEASURES**

**SKIN CONTACT:**

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

**EYE CONTACT:**

**URGENT!** Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

**INHALATION:**

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

**INGESTION:**

Do not feed anything by mouth to an unconscious or convulsive

victim. Do not induce vomiting. Immediately contact physician.  
Dilute contents of stomach using 3-4 glasses milk or water.

**NOTES TO PHYSICIANS:**

No special instructions

## 5 FIRE FIGHTING MEASURES

**FIRE FIGHTING INSTRUCTIONS:**

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

**EXTINGUISHING MEDIA:**

dry chemical, carbon dioxide or foam--Avoid water if possible.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Thermal decomposition (destructive fires) yields elemental oxides.

**FLASH POINT:**

> 200F > 93C P-M(CC)

**MISCELLANEOUS:**

Corrosive to skin

UN2967; Emergency Response Guide #154

## 6 ACCIDENTAL RELEASE MEASURES

**PROTECTION AND SPILL CONTAINMENT:**

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

**DISPOSAL INSTRUCTIONS:**

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

## 7 HANDLING & STORAGE

**HANDLING:**

Acidic. Corrosive (Moist skin/eyes). Do not mix with basic materials.

**STORAGE:**

Keep containers closed when not in use. Store in a cool, dry location away from alkalis and oxidizers.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE LIMITS**

**CHEMICAL NAME**

**SULFAMIC ACID (AMIDOSULFONIC ACID)**

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

**ETHYLENE GLYCOL**

PEL (OSHA): 50 PPM-C

TLV (ACGIH): 100 PPM-C

**SILICON DIOXIDE, SYNTHETIC, FUMED (AMORPHOUS SILICA)**

PEL (OSHA): 6 MG/M3 (TOTAL DUST)

TLV (ACGIH): 10 MG/M3 (TOTAL DUST)

**ENGINEERING CONTROLS:**

adequate ventilation

**PERSONAL PROTECTIVE EQUIPMENT:**

Use protective equipment in accordance with 29CFR 1910 Subpart I

**RESPIRATORY PROTECTION:**

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use a respirator with organic vapor cartridges and dust/mist prefilters.

**SKIN PROTECTION:**

neoprene gloves-- Wash off after each use. Replace as necessary.

**EYE PROTECTION:**

airtight chemical goggles

## 9 PHYSICAL & CHEMICAL PROPERTIES

Density	75.000 lb/cu.	Vapor Pressure (mmHG)	< 0.1
Freeze Point (F)	NA	Vapor Density (air=1)	< 1.00
Freeze Point (C)	NA		
Viscosity(cps 70F, 21C)	NA	% Solubility (water)	~ 15.0
Odor		Slight	
Appearance		Colorless To Red	
Physical State		Granules	
Flash Point	P-M(CC)	> 200F > 93C	
pH 1% Sol. (approx.)		~ 1.2	
Evaporation Rate (Ether=1)		< 1.00	

NA = not applicable ND = not determined

## 10 STABILITY & REACTIVITY

**STABILITY:**

Stable under normal storage conditions.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

**INCOMPATIBILITIES:**

May react with strong oxidizers.

**DECOMPOSITION PRODUCTS:**

Thermal decomposition (destructive fires) yields elemental oxides.

**INTERNAL PUMPOUT/CLEANOUT CATEGORIES:**

"B"

## 11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg

NOTE - Estimated value

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Estimated value

Skin Irritation Score RABBIT: MODERATE

NOTE - Estimate based on testing of similar material; non-corrosive by DOT test.

## 12 ECOLOGICAL INFORMATION

#### AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Acute Bioassay (pH adjusted)

LC50= 260; No Effect Level= 90 mg/L

Fathead Minnow 96 Hour Static Bioassay with 48-Hour Renewal (pH adjusted)

0% Mortality= 2000 mg/L

#### BIODEGRADATION

No Data Available.

### 13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :  
D002=Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

### 14 TRANSPORT INFORMATION

DOT HAZARD: Corrosive to skin  
UN / NA NUMBER: UN2967  
DOT EMERGENCY RESPONSE GUIDE #: 154

### 15 REGULATORY INFORMATION

#### TSCA:

All components of this product are listed in the TSCA inventory.

#### CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

#### USDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS:

SEC.A3

#### SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

#### SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

#### SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
107-21-1	ETHYLENE GLYCOL	2.0-5.0%

#### CALIFORNIA REGULATORY INFORMATION

#### CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

#### MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

### 16 OTHER INFORMATION

#### NFPA/HMIS

#### CODE TRANSLATION

Health	3	Serious Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard

