




G.K. Chemical Specialties Co. Inc.  
90 Barbados Blvd.  
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## SAFETY DATA SHEET (SDS)

<b>PRODUCT NAME: G-450 EXTRA HEAVY DUTY DETERGENT</b>	
<b>HEALTH HAZARD RATING:</b>	(3)- SERIOUS HAZARD NFPA Rating
<b>FLAMMABILITY HAZARD RATING:</b>	(0)- MINIMAL HAZARD
<b>REACTIVITY HAZARD RATING:</b>	(0)- MINIMAL HAZARD
<b>PERSONAL PROTECTION:</b>	B - (Safety glasses, Gloves,)
<b>HAZARD ALERT SIGN:</b>	

<b>SECTION 1 – IDENTIFICATION</b>	
<b>PRODUCT IDENTIFIER</b>	
<b>PRODUCT NAME</b>	G-450 EXTRA HEAVY DUTY DETERGENT
<b>MANUFACTURER'S NAME AND ADDRESS</b> <b>EMERGENCY PHONE NO.</b>	G.K. Chemical Specialties Co. Inc. 90 Barbados Blvd. Scarborough, Ontario M1J 1K9 (416) 261-7182 / 905 427-7605/ 416-526-4037 CHEMTREC( 24 HR EMERGENCY) 1-800-424-9300 International CHEMTREC: 1-703-527-3887
<b>SUPPLIER'S NAME AND ADDRESS</b> <b>EMERGENCY PHONE NO.</b>	
<b>CHEMICAL NAME</b>	NOT APPLICABLE
<b>CHEMICAL FAMILY</b>	STRONG BASE
<b>TRADE NAME AND SYNONYMS</b>	NOT APPLICABLE
<b>MATERIAL USE</b>	COMMERCIAL, INSTITUTIONAL AND INDUSTRIAL CLEANING

G.K. Chemical Specialties Co. Inc. has compiled the information and recommendations contained in this Safety Data Sheet from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation.

G.K. Chemical Specialties Co. Inc. extends no warranty and assumes no responsibility as to the accuracy of the content or sufficiency of the information and expressly disclaims all liability for reliance thereon. This SDS provides guidelines for the safe handling of this product. It does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

G.K. Chemical Specialties Co. Inc. assumes no responsibility for personal injury or property damage to vendors, users or third parties caused by the material. Such vendors or users assume all risks associated with the use of the material.

INGREDIENTS. This SDS, under section of Ingredients, contains all ingredients listed under INGREDIENT DISCLOSURE LIST P.C. 1987-2719, 20/1/88 CANADA GAZETTE PART II VOL. 122, No 2 of HAZARDOUS PRODUCT ACT.

Percentage range of concentration of ingredients is expressed as percentage by weight of the total weight of the product. Ingredient List does not necessarily list all ingredients in the formulation and does not necessarily list all ingredient range of concentration, other than ingredients under the Disclosure List.

T.L.V. (units) or Threshold Limit Values refer to the limiting concentrations recommended by the Ministry of Labour. These values were adopted by the American Conference of Governmental Industrial Hygienists (A.C.G.I.H.). The figures refer to time-weighted average concentrations as P.P.M. (V/V) or mg/m<sup>3</sup> for a normal working day or at any time for some materials.

"C.A.S REG. No." means the identification number assigned to a chemical substance by the Chemical Abstracts Service Division of the American Chemical Society.

"LC 50" means the concentration of a substance in air that when administered by means of inhalation over a specified length of time in an animal assay, is expected to cause the death of 50 per cent of a defined animal population.

"LD 50" means the single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause death of 50 per cent of a defined animal population.

FLASH POINT. The minimum temperature at which a substance gives off flammable vapors which in contact with spark or flame will ignite.

NIOSH- National institute for occupational safety and health

STEL- Short term exposure limit

TWA- Time-weighted average

PEL- Permissible exposure limit

ACGIH- American conference of governmental industrial hygienist

OSHA- Occupational safety and health act

**SECTION 2 – HAZARD IDENTIFICATION**

Dangerous Goods: CLASS E and Class D. DIV. 2A, 2B

**GHS CLASSIFICATION**

Acute Toxicity (oral) –Category 4  
 Serious Eye Damage –Category 1  
 Skin Corrosion/Irritation –Sub- Category 1A  
 Flammable liquids- Category 4

**HAZARDOUS SUBSTANCE (HSNO) CLASSIFICATION**

Corrosive liquid: CLASS E and CLASS D, DIV 2A,2B

GHS Label Elements, including precautionary statements: Hazard Statements:

Signal word- **DANGER**

**HAZARD STATEMENTS:**

H314: Causes severe skin burns and eye damage  
 H318: Causes serious eye damage  
 H302: Harmful if swallowed  
 H227: Combustible liquid



**PREVENTION:**

P260: Do not breathe fumes, mist, vapors or spray  
 P264: Wash skin thoroughly after handling  
 P280: Wear protective gloves/ protective clothing/ eye protection/ face protection  
 P405: Store locked up  
 P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources

**RESPONSE**

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes: Remove contact lenses if present and easy to do so. Continue rinsing.  
 P301 + P310: If swallowed: Immediately call a POISON CENTER or doctor/ physician.  
 P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
 P304 +P340 + P310: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician  
 P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water. Showers

**POTENTIAL HEALTH EFFECTS**

INHALATION: If mist is inhaled may be harmful. May Cause respiratory tract irritation.  
 SKIN: May cause skin irritation and/ or chemical burns.  
 EYE: May cause serious damage  
 INGESTION: May be fatal if swallowed

P273: Avoid release to the environment.

<b>SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS</b>				
<b>HAZARDOUS INGREDIENTS</b>	<b>APPROXIMATE CONCENTRATION %</b>	<b>C.A.S., N.A. OR U.N. NUMBERS</b>	<b>LD50 {SPECIFY SPECIES &amp; ROUTE}</b>	<b>LC 50 {SPECIFY SPECIES}</b>
Potassium Hydroxide	1 - 3	1310-58-3	Oral (Rat): 273 mg/kg Dermal (Rabbit): >1260 mg/kg	<b>TWA: 2 mg/m<sup>3</sup></b>
Sodium metasilicate pentahydrate	3 - 7	10213-79-3	Oral (Rat): 1153 mg/kg Dermal (Rabbit): 250mg/24h	<b>TWA: 2 mg/m<sup>3</sup></b>
Cocoamide DEA	1 - 3	68603-42-9	Oral (Rat): >5,000 mg/kg Dermal (Rabbit): >2000mg/kg	
Tetrasodium ethylenediamine tetraacetate	< 1	64-02-8	Oral (Rat): 3,030 mg/kg Dermal (Rabbit): >5,000mg/kg	
2-Aminoethanol	3 - 7	141-43-5	Oral (Rat): 1,515mg/kg Dermal (Rabbit): 2,504mg/kg	<b>TWA: 6mg/m<sup>3</sup></b>
2-Butoxyethanol	3 - 7	111-76-2	Oral (Rat): 1,300mg/kg Dermal (Rabbit): >5000mg/kg	<b>TWA: 240 mg/m<sup>3</sup></b>
Sodium (C10-16) Benzene Sulfonate	1 - 3	68081-81-2	Oral (Rat): >1,000 mg/kg Dermal (Rabbit): >2000mg/kg	
Poly(oxy-1,2 ethanediyl) a– Hydro-w hydroxyl-decyl ethers phosphate	3 - 7	9004-80-2	Oral (Rat): >1,500 mg/kg Dermal (Rabbit): >5,000mg/kg	
Water, inert	Balance	Non hazardous		

<b>SECTION 4 – FIRST AID MEASURES</b>	
<b>SKIN CONTACT</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
<b>EYE CONTACT</b>	Immediately hold eyelids open and flush with water for at least 15 minutes. Seek medical attention.
<b>INHALATION</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary
<b>INGESTION</b>	Harmful if swallowed. Do not induce vomiting. Drink 1 or 2 glasses of water. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
<b>NOTES TO PHYSICIAN</b>	Product is corrosive material. Strong Base. Causes respiratory irritation if inhaled. Symptoms may include: Coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. <i>If ingested may cause burns or irritation of the lining of the mouth, throat, and gastrointestinal tract. Symptoms may include abdominal pain, vomiting, burns, bleeding and eventually death.</i> Corrosive to the eyes and may cause severe damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

<b>SECTION 5 – FIRE-FIGHTING MEASURES</b>	
FLASH POINT ( °C)	67°C (Flash point for 2-Butoxyethanol)
FLASH POINT METHOD	Closed cup
AUTOIGNITION TEMPERATURE ( °C)	>230°C (446° F)
UPPER FLAMMABLE LIMIT ( % VOL.)	10.6
LOWER FLAMMABLE LIMIT ( % VOL. )	1.3
HAZARDOUS COMBUSTION PRODUCTS	Oxides of Nitrogen, Carbon monoxide, Carbon dioxide
UNUSUAL FIRE/ EXPLOSION HAZARDS	Releases flammable hydrogen gas when reacting with some metals
SENSITIVITY TO MECHANICAL IMPACT	No.
SENSITIVITY TO STATIC DISCHARGE	No
EXTINGUISHING MEDIA	Use extinguishing agents appropriate for the burning material. Use water spray to keep fire-exposed containers cool. Use Carbon dioxide, Alcohol-resistant foam, Dry chemical
SPECIAL FIRE FIGHTING PROCEDURES	Fire fighters should wear full protective clothing, including self-contained breathing equipment. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of Oxides of Nitrogen, Carbon Dioxide, Carbon Monoxide

<b>SECTION 6 – ACCIDENTAL RELEASE MEASURES</b>	
LEAK AND SPILL PROCEDURE	Stop leak. Move containers from spill area. Absorb spill with vermiculite absorbent material, neutralize the residue with a dilute solution of acid (e.g. Phosphoric acid) and place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. LARGE SPILL: Corrosive liquid. Stop leak if without risk. Do not touch spilled material. Neutralize the residue. Be careful that vapors are not present at a concentration level above TLV
ENVIRONMENTAL PRECAUTIONARY	Prevent entry into sewers or streams. Any release to the environment should be subject to federal or local reporting requirements.
PERSONAL PRECAUTIONARY MEASURES	Wear protective clothing during cleanup. See section 8 for recommendations on the use of personal protective equipment. Avoid breathing vapors, mist or gas. Avoid contact with clothing and skin.

<b>SECTION 7 – HANDLING AND STORAGE</b>	
HANDLING PROCETURES	Avoid contact with eyes and skin. Avoid ingestion. Use good industrial hygiene practices in handling this product. Keep container closed when not in use.
STORAGE NEEDS	Keep container tightly closed. Store in a cool area above freezing point. Keep out of the reach of children. Keep in properly labeled containers.

<b>SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION</b>	
VENTILATION REQUIREMENTS	Good ventilation is recommended. When ACGIH TLV (Threshold Limit Value) is greater than 2 mg/ m <sup>3</sup> as Potassium Hydroxide and Sodium Metasilicate provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective. NIOSH Ceiling: 2 mg/m <sup>3</sup> , ACGIH TLV Ceiling 2 mg/m <sup>3</sup> , OSHA PEL 2mg/m <sup>3</sup> for Potassium Hydroxide (1310-58-3) and Sodium metasilicate (10213-79-3)

<b>PROTECTIVE EQUIPMENT</b>	Ensure that eyewash stations are proximal to the work-station location. The selection of personal protective equipment will vary depending on the condition of use
<b>EYE/TYPE</b>	Splash goggles, safety glasses
<b>RESPIRATORY/T YPE</b>	Approved/ certified vapor respirator when airborne concentration exceed exposure limits.
<b>GLOVE/TYPE</b>	Nitrile, Vinyl, Butyl impervious gloves
<b>FOOTWEAR/TYP E</b>	Boots. Chemical resistant and as specified by the workplace
<b>BODY/TYPE</b>	Protective clothing is required. Use impervious clothing (apron, coveralls). The selection of personal protective equipment will vary depending on the conditions of use.

<b>SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>APPEARANCE – PHYSICAL STATE</b>	Thin, clear liquid
<b>ODOUR</b>	Mild cherry aroma
<b>ODOUR THRESHOLD (PPM)</b>	Not determined
<b>PH</b>	12.50 ± 0.5 concentrate
<b>MELTING POINT ( °C)</b>	See freezing point
<b>BOILING POINT ( °C)</b>	>100°C (212° F) INITIAL
<b>FREEZING POINT ( °C)</b>	0°C (32° F)
<b>EVAPORATION RATE</b>	>1.00 (n-Butyl Acetate)
<b>FLAMMABILITY</b>	Combustible
<b>FLASH POINT ( °C)</b>	67° C
<b>AUTO IGNITION TEMPERATURE</b>	>230° C
<b>DECOMPOSITION TEMPERATURE</b>	Not available
<b>VAPOUR DENSITY</b>	Not available
<b>VAPOUR PRESSURE</b>	@ 20°C 0.87 mmHg
<b>SOLUBILITY</b>	Completely soluble in water
<b>VISCOSITY</b>	Thin liquid
<b>% VOLATILE BY VOLUME</b>	85 ± 0.5 %
<b>SPECIFIC GRAVITY</b>	1.03 ± 0.02 gm / cm <sup>3</sup> @ 20°C

<b>SECTION 10 – STABILITY AND REACTIVITY</b>	
<b>REACTIVITY</b>	Exothermic reaction with incompatible materials
<b>CHEMICAL STABILITY</b>	Stable under normal conditions
<b>POSSIBILITY OF HAZARDOUS REACTIONS</b>	Arise in contact with incompatible materials.
<b>CONDITIONS TO AVOID</b>	Avoid incompatible materials
<b>INCOMPATIBLE MATERIALS</b>	Avoid contact with strong Acids, Nitrocarbons, halocarbons, Potassium persulfate, Sodium borohydride, Silver nitrate, Acetaldehyde, Hydroquinone, Phosphorus, Acrolein, Acrylonitrile, Maleic anhydride, Cyanogen azide. Also avoid prolonged contact with metals such as Aluminum, Zinc, brass and Tin.
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Oxides of Nitrogen, Carbon dioxide, Carbon monoxide

<b>SECTION 11 –TOXICOLOGICAL INFORMATION</b>	
<b>TOXICITY EFFECTS ON ANIMALS</b>	<p><b>For Potassium Hydroxide (1310-58-3):</b> Acute oral toxicity (LD50): 273mg/kg (Rat), LD50 dermal (Rabbit) &gt;1,260 mg/kg,</p> <p><b>For Sodium Metasilicate Pentahydrate (10213-79-3):</b> Acute oral toxicity LD50 (Rat) : 1153 mg/kg. Acute dermal (Rabbit): 250mg/kg/24 h</p> <p><b>For Cocoamide DEA (68603-42-9):</b> Acute Oral (Rat): &gt;5,000 mg/kg, Acute Dermal (Rabbit) : &gt;2,000mg /kg</p> <p><b>For Tetrasodium ethylenediamine tetraacetate (64-02-8):</b> Acute Oral (Rat): 3,030 mg/kg, Dermal (Rabbit): &gt;5,000 mg/kg</p> <p><b>For 2-Aminoethanol (141-43-5):</b> Acute Oral toxicity LD50 (Rat): 1,515 mg/kg, Dermal (Rabbit): 2,504 mg/kg</p> <p><b>For 2-Butoxyethanol (111-76-2):</b> Acute Oral toxicity LD50 (Rat): 1,300 mg/kg, Dermal (Rabbit): &gt;5,000 mg/kg</p> <p><b>For Sodium (C10-16) Benzene Sulfonate (68081-81-2):</b> Acute Oral toxicity LD50(Rat): &gt;1,000 mg/kg, Dermal (Rabbit): &gt;2,000 mg/kg</p> <p><b>For Poly(oxy-1,2 ethanediyl) a- Hydro-w hydroxyl-decyl ethers phosphate (9004-80-2):</b> Acute Oral toxicity LD50 (Rat): &gt;1,500 mg/kg, Dermal (Rabbit): &gt;5,000 mg/kg</p>
<b>TOXIC EFFECTS ON HUMANS</b>	<p><b>Inhalation:</b> May cause irritation to the respiratory tract, leading to sore throat, coughing, shortness of breath and delayed lung edema.</p> <p><b>Ingestion:</b> May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and tissue destruction of the esophagus and digestive tract.</p> <p><b>Skin contact:</b> Contact with this corrosive liquid may cause burns and ulceration</p> <p><b>Eye contact:</b> Causes severe burns</p>
<b>CHRONIC EFFECTS ON HUMANS</b>	Prolonged contact with skin may defat tissue causing dermatitis or skin problems.
<b>CARCINOGENICITY</b>	No evidence
<b>TERATOGENICITY</b>	No data available
<b>MUTAGENICITY</b>	No evidence
<b>REPRODUCTIVE EFFECTS</b>	No evidence

<b>SECTION 12 –ECOLOGICAL INFORMATION</b>	
<b>ECOTOXICITY DATA</b>	<p><b>Figures for Potassium Hydroxide (1310-58-3)</b>  Toxicity to fish: LC50- Gambusia affinis (Mosquito fish) 80 mg/L/96h. LC50 Fathead Minnow 179 mg /L /96 h/ static. Acute toxicity to aquatic invertebrates: Daphnia magna EC50=60 mg /L /48 h/ static. Algae Toxicity: EC50 (Selenastrum capricornutum): 61 mg /L /96 h/ static bioassay at 23-24° C</p> <p><b>Figures for Sodium metasilicate pentahydrate (10213-79-3)</b>  Ecotoxicity in water (LC50): Acute toxicity to fish: 2320 ppm/96 hours/ Mosquito fish (Gambusia affinis). Acute toxicity to aquatic invertebrates: 247 ppm/ 96 hours Daphnia magna. Acute toxicity to snail eggs (Lymnea): 632 ppm/ 96 h</p> <p><b>Figures for Cocoamide DEA (68603-42-9):</b> Toxicity to fish  LC50 (Zebra fish): 6.7 mg/L /96 h/ static-renewal. EC50 (Daphnia magna): 3.3 mg / L / 24 h static</p> <p><b>Figures for Tetrasodium ethylenediamine tetraacetate (64-02-8):</b> Toxicity to fish  LC50, Lepomis macrochirus (Bluegill sunfish): 1,592 mg /L /96 h, static test.  Aquatic Invertebrate acute toxicity EC50, Daphnia magna (Water flea): 610-1,033 mg / L / 24 h, immobilization</p> <p><b>Figures for 2-Aminoethanol (141-43-5):</b> Acute toxicity to fish LC50 (Cyprinus carpio): 349 mg /L/96 h. Acute Crustacea EC50, Daphnia magna : 65 mg / L /48h</p>

	<p><b>Figures for 2 –Butoxyethanol (111-76-2):</b> Material is practically non-toxic to aquatic organisms on an acute basis (LC50/ EC50) &gt;100 mg / L in most sensitive species tested. EC50, Daphnia magna (Water flea): 1,550 mg /L /48 h.</p> <p><b>For Sodium (C10-16) Benzene Sulfonate (68081-81-2):</b> Acute toxicity to fish LC50, Fathead minnow (Pimephales promelas): 1.67 mg / L /96 h. EC50 ,Daphnia magna (Water flea): 2.4 mg /L/ 48 h. EC50 Algae: 29 mg /L /96 h. This product is Toxic to aquatic organisms however it biodegrades fast. Primary degradation intermediates are Sulfophenyl Carboxylates which further degrades to CO<sub>2</sub>, SO<sub>4</sub> and water. Biodegradation intermediates have LC50 &gt;1000 mg / L for Fathead Minnows and Daphnia magna and are not toxic to aquatic organisms</p> <p><b>For Poly(oxy-1,2 ethanediyl) a- Hydro-w hydroxyl- decyl ethers phosphate (9004-80-2):</b> No data available.</p> <p>Because of the high PH of this product, it would be expected to exhibit moderate toxicity to aquatic organisms.</p>
<b>BIODEGRADABILITY</b>	Does not bioaccumulate. This product will disassociate into ionic form in the aquatic environment. Natural acidity in water and soil and Carbon dioxide will neutralize this product. Ingredients are biodegradable
<b>PRODUCTS OF DEGRADATION</b>	Not available

<b>SECTION 13 – DISPOSAL CONSIDERATIONS</b>	
<b>WASTE DISPOSAL</b>	Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. This product is hazardous to the aquatic environment in large volumes. Keep out of waterways.
<b>INFORMATION ON SAFE HANDLING FOR DISPOSAL INCLUDING ANY CONTAMINATED PACKAGING</b>	Suitable waste facility.

<b>SECTION 14 – TRANSPORT INFORMATION</b>	
<b>UN NUMBER</b>	3266
<b>UN PROPER SHIPPING NAME</b>	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S (8% solution of Potassium Hydroxide and Sodium Metasilicate mixture)
<b>TRANSPORT HAZARD CLASS</b>	CLASS: 8 (CORROSIVE)
<b>PACKAGING GROUP</b>	III
<b>ENVIRONMENTAL HAZARDS</b>	YES
<b>TRANSPORT IN BULK, if applicable</b>	NOT AVAILABLE
<b>SPECIAL PRECAUTIONS</b>	Guide to Canadian Transportation/ Emergency Response Guidebook (ERG): # 154

<b>SECTION 15 – REGULATORY INFORMATION</b>	
<b>SAFETY HEALTH &amp; ENVIRONMENTAL REGULATIONS SPECIFIC TO THE PRODUCT</b>	<p>U.S. TSCA inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) INVENTORY List or exempt.</p> <p>Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.</p>



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<b>SECTION 16 – OTHER INFORMATION</b>	
<b>PREPARED BY:</b>	Gus Kaklamanos - Chemist
<b>TELEPHONE NO.:</b>	416-261-7182
<b>DATE OF THE LATEST REVISION OF SDS:</b>	October 5, 2017

NOTE: A lot of the information provided in this SDS may refer to very large or special usage of the product. The basic purpose of this product is to be used as a cleaner, where quantities stored and used at any time by various users are very small.

NOTE: In case of medical emergency ensure that medical personnel are aware of the material involved. Show this SDS to the doctor in attendance.