




G.K. Chemical Specialties Co. Inc.
90 Barbados Blvd.
Scarborough, Ontario M1J 1K9
Tel: (416) 261-7182 Fax: (416) 261-5663

SAFETY DATA SHEET (SDS)

PRODUCT NAME: G-1200 MECHANICAL DISHWASHING DETERGENT	
HEALTH HAZARD RATING:	(3)- HIGH HAZARD NFPA Rating
FLAMMABILITY HAZARD RATING:	(0)- MINIMAL HAZARD
REACTIVITY HAZARD RATING:	(0)- MINIMAL HAZARD
PERSONAL PROTECTION:	B - (Safety glasses, Gloves,)
HAZARD ALERT SIGN:	

SECTION 1 – IDENTIFICATION	
PRODUCT IDENTIFIER	
PRODUCT NAME	G-1200 Mechanical Dishwashing Detergent
MANUFACTURER'S NAME AND ADDRESS EMERGENCY PHONE NO.	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
SUPPLIER'S NAME AND ADDRESS EMERGENCY PHONE NO.	
CHEMICAL NAME	NOT APPLICABLE
CHEMICAL FAMILY	STRONG BASE
TRADE NAME AND SYNONYMS	NOT APPLICABLE
MATERIAL USE	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/m³ 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: **WHMIS:** CLASS E and Class D. DIV. 2B

GHS CLASSIFICATION

Acute Toxicity (oral) – Category 4

Serious Eye Damage – Category 1

Skin Corrosion/Irritation – Sub- Category 1A

Specific target organ toxicity (single exposure)- Category 3 respiratory tract irritation

Metal Corrosion- Category 1

HAZARDOUS SUBSTANCE (HSNO) CLASSIFICATION

Corrosive liquid: CLASS E and CLASS D, DIV 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

H290: May be corrosive to metals

H402: Harmful to aquatic life

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

P273: Avoid release to the environment

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. Shower

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



NOTE: Product is corrosive to Aluminum, Galvanized, Brass and Tin. Avoid prolonged contact with these metals.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS				
HAZARDOUS INGREDIENTS	APPROXIMATE CONCENTRATION %	C.A.S., N.A. OR U.N. NUMBERS	LD50 {SPECIFY SPECIES & ROUTE}	LC 50 {SPECIFY SPECIES}
Potassium Hydroxide	3 - 7	1310-58-3	Oral(Rat): 273 mg/kg Dermal (Rabbit): >1260 mg/kg	TWA: 2 mg/m³
Sodium Hydroxide	5 - 10	1310-73-2	Oral (Rat): 140-340 mg/kg Dermal (Rabbit): 1,350 mg/kg	TWA: 2 mg/m³
Sodium metasilicate pentahydrate	3 - 7	10213-79-3	Oral (Rat): 1153 mg/kg Dermal (Rabbit): 250mg/24h	TWA: 2 mg/m³
Polyphosphoric acids, Potassium salts	1 - 5	68956-75-2	Oral(Rat): 2444 mg/kg Dermal (Rat): >5000mg/kg	
Tetrasodium ethylenediamine tetraacetate	1 - 5	64-02-8	Oral (Rat): 3,030 mg/kg Dermal (Rabbit): >5,000mg/kg	
Sodium Gluconate	1 - 5	527-07-1	Oral (Rat): >2000mg/kg Dermal (Rabbit): No data	
Sodium Xylene Sulfonate	< 1	1300-72-7	Oral (Rat) : >5000 mg/kg Dermal (Rabbit): >5000mg/kg	
Sodium octanesulfonate	<1	5324-84-5	Oral (Rat) : 1,200 mg/kg Dermal (Rabbit) : >2000mg/kg	
Water, inert	Balance	Non hazardous		

SECTION 4 – FIRST AID MEASURES	
SKIN CONTACT	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
EYE CONTACT	Immediately hold eyelids open and flush with water for at least 15 minutes. Seek medical attention.
INHALATION	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
INGESTION	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.
NOTES TO PHYSICIAN	Product is corrosive material. Strong Base. Causes respiratory irritation if inhaled. Symptoms may include: Coughing, choking. 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, perforation, bleeding and eventually death.</i> Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness.

SECTION 5 – FIRE-FIGHTING MEASURES	
FLASH POINT (°C)	Nil
FLASH POINT METHOD	Not applicable
AUTOIGNITION TEMPERATURE (°C)	Non-combustible
UPPER FLAMMABLE LIMIT (% VOL.)	Not applicable
LOWER FLAMMABLE LIMIT (% VOL.)	Not applicable
HAZARDOUS COMBUSTION PRODUCTS	Oxides of Phosphorus, Oxides of Sodium, 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
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 Phosphorus, and Hydrogen gas upon contact with metals.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
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.
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

SECTION 7 – HANDLING AND STORAGE	
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. Store in Polyethylene, stainless steel or glass containers. Do not store in Aluminum or Galvanized containers.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
VENTILATION REQUIREMENTS	Good ventilation is recommended. When ACGIH TLV (Threshold Limit Value) is greater than 2 mg/ m ³ as Potassium Hydroxide and Sodium Hydroxide provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective. NIOSH Ceiling: 2 mg/m ³ , ACGIH TLV Ceiling 2 mg/m ³ , OSHA PEL 2mg/m ³ for Potassium Hydroxide (1310-58-3), Sodium Hydroxide (1310-73-2) and Sodium metasilicate (10213-79-3)

PROTECTIVE EQUIPMENT	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
EYE/TYPE	Splash goggles, safety glasses
RESPIRATORY/TYPE	Approved/ certified vapor respirator when airborne concentration exceed exposure limits.
GLOVE/TYPE	Nitrile, Vinyl, Butyl impervious gloves
FOOTWEAR/TYPE	Boots. Chemical resistant and as specified by the workplace
BODY/TYPE	Protective clothing is required. Use impervious clothing (apron, coveralls). The selection of personal protective equipment will vary depending on the conditions of use.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE – PHYSICAL STATE	Thin clear liquid
ODOUR	NO ODOUR
ODOUR THRESHOLD (PPM)	Not determined
PH	13.50 ± 0.5 concentrate
MELTING POINT (°C)	See freezing point
BOILING POINT (°C)	>100°C (212° F) INITIAL
FREEZING POINT (°C)	0°C (32° F)
EVAPORATION RATE	>1.00 (n-Butyl Acetate)
FLAMMABILITY	Not combustible
FLASH POINT (°C)	Not applicable
AUTO IGNITION TEMPERATURE	Not applicable
DECOMPOSITION TEMPERATURE	Not available
VAPOUR DENSITY	Not available
VAPOUR PRESSURE	@ 20°C 2.37 kPa
SOLUBILITY	Completely soluble in water
VISCOSITY	Thin liquid
% VOLATILE BY VOLUME	80 ± 0.5 %
SPECIFIC GRAVITY	1.12 ± 0.04 gm / cm ³ @ 20°C

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

SECTION 11 –TOXICOLOGICAL INFORMATION	
TOXICITY EFFECTS ON ANIMALS	<p>For Potassium Hydroxide (1310-58-3): Acute Oral toxicity, LD50 (Rat): 273mg/kg. LD50 dermal (Rabbit) >1260 mg/kg,</p> <p>For Sodium Hydroxide (1310-73-2): Acute oral toxicity LD50 (Rat) 140-340 mg/kg. Acute dermal (Rabbit): 1,350 mg/kg</p> <p>For Sodium metasilicate pentahydrate (10213-79-3): Acute Oral (Rat): 1153 mg/kg, Acute Dermal (Rabbit): 250 mg/24h</p> <p>For Polyphosphoric acids, Potassium salts (68956-75-2): Acute Oral Toxicity, LD50 (Rat): 2,444 mg/kg. Acute Dermal Toxicity, LD50 (Rat): >5,000 mg/kg</p> <p>For Tetrasodium ethylenediamine tetraacetate (64-02-8): Acute Oral Toxicity, LD50 (Rat): 3,030 mg/kg. Acute Dermal Toxicity, LD50 (Rabbit): >5,000 mg/kg</p> <p>For Sodium Gluconate (527-07-1): Acute Oral Toxicity, LD50 (Rat): >2,000 mg/kg</p> <p>For Sodium Xylene Sulfonate (1300-72-7): Acute Oral Toxicity, LD50 (Rat): >5,000 mg/kg. Acute Dermal Toxicity, LD50 (Rabbit): 5,000 mg/kg</p> <p>For Sodium octanesulfonate (5324-84-5): Acute Oral Toxicity, LD50 (Rat): 1,200 mg/kg. Acute Dermal Toxicity, LD50 (Rabbit): >2,000 mg/kg</p>
TOXIC EFFECTS ON HUMANS	<p>Inhalation: May cause chemical burns to the respiratory tract, leading to sore throat, coughing, shortness of breath and delayed lung edema.</p> <p>Ingestion: May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.</p> <p>Skin contact: Contact with this corrosive liquid may cause burns and ulceration</p> <p>Eye contact: Causes severe burns</p>
CHRONIC EFFECTS ON HUMANS	Prolonged contact with skin may defat tissue causing dermatitis or skin problems.
CARCINOGENICITY	No evidence
TERATOGENICITY	No data available
MUTAGENICITY	No evidence
REPRODUCTIVE EFFECTS	No evidence

SECTION 12 –ECOLOGICAL INFORMATION	
ECOTOXICITY DATA	<p>Figures for Potassium Hydroxide (1310-58-3) Ecotoxicity in water (LC50): Acute toxicity to fish 80 mg/l/96 hours, Mosquito fish (Gambusia affinis). Acute toxicity to fish (Fathead Minnow) 96-hr static: LC50=179 mg/l. Acute toxicity to aquatic invertebrates: (Daphnia magna) 48-hr static: EC50=60 mg/l. Algae Toxicity: EC50 (Selenastrum capricornutum): 61 mg/l/96hr (static bioassay at 23-24°C).</p> <p>Figures for Sodium Hydroxide (1310-73-2) Toxicity to fish: LC50- Gambusia affinis (Mosquito fish) 125 mg/L/96h, LC50 Oncorhynchus mykiss (rainbow trout) 45.4 mg/L/96h Toxicity to daphnia and other aquatic invertebrates: EC50-Daphnia-40 mg/L/48h.</p> <p>Figures for Sodium metasilicate pentahydrate (10213-79-3) 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>Figures for Polyphosphoric acids Potassium salts (68956-75-2): Acute Toxicity to fish, LC50, Mysidopsis bahia (Saltwater mysid): 100 mg /L /96 h.</p>

	<p>Figures for Tetrasodium ethylenediamine tetraacetate (64-02-8): Material is practically non-toxic to fish on an acute basis. Acute Toxicity to fish, LC50, Bluegill sunfish (<i>Lepomis macrochirus</i>): 1,592 mg /L / 96 h. /static test. Acute Toxicity to aquatic invertebrates, EC50, <i>Daphnia magna</i> (Water flea): 610-1,033 mg /L / 24 h. immobilization.</p> <p>Figures for Sodium Gluconate: (527-07-1): Acute Toxicity to fish, LC50: >1000 mg/L/96h. Acute Toxicity to aquatic invertebrates, EC50, <i>Daphnia magna</i> (Water flea): >500 mg/L/48h.</p> <p>Figures for Sodium Xylene Sulfonate (1300-72-7): Acute Toxicity to fish, LC50, Rainbow trout, static test: >1,000 mg /L / 96 h. Acute Toxicity to aquatic invertebrates, EC50, <i>Daphnia magna</i> (water flea), static test: >1,000 mg /L / 48 h. Acute Toxicity to freshwater algae, EC50, static test: 230 mg /L / 48 h. Ingredient relatively harmless to aquatic environment. Product readily BIODEGRADABLE.</p> <p>Figures for Sodium octanesulfonate (5324-84-5): Acute Toxicity to fish, LC50, <i>Pimephales promelas</i>: 29 mg /L / 96 h. Acute Toxicity to aquatic invertebrates, EC50, <i>Daphnia magna</i> (water flea): 5.55 mg /L / 48 h. Material is BIODEGRADABLE.</p> <p>Because of the high PH of this product, it would be expected to exhibit moderate toxicity to aquatic organisms.</p>
BIODEGRADABILITY	<p>Does not bioaccumulate. This product will disassociate into ionic form in the aquatic environment. Natural acidity in water and soil will slowly neutralize this product.</p> <p>Volatile organic compounds (VOC): None. A small amount of phosphate (<0.4% as Phosphorous P₂O₅) may persist or incorporate into biological systems.</p>
PRODUCTS OF DEGRADATION	Not available

SECTION 13 – DISPOSAL CONSIDERATIONS	
WASTE DISPOSAL	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.
INFORMATION ON SAFE HANDLING FOR DISPOSAL INCLUDING ANY CONTAMINATED PACKAGING	Suitable waste facility.

SECTION 14 – TRANSPORT INFORMATION	
UN NUMBER	3266
UN PROPER SHIPPING NAME	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S (<24 % mixture of Potassium Hydroxide, Sodium Hydroxide, Sodium Metasilicate pentahydrate)
TRANSPORT HAZARD CLASS	CLASS: 8 (CORROSIVE)
PACKAGING GROUP	III
ENVIRONMENTAL HAZARDS	Marine pollutant
TRANSPORT IN BULK, if applicable	NOT AVAILABLE
SPECIAL PRECAUTIONS	Guide to Canadian Transportation/ Emergency Response Guidebook (ERG): # 154

SECTION 15 – REGULATORY INFORMATION**SAFETY HEALTH & ENVIRONMENTAL
REGULATIONS SPECIFIC TO THE PRODUCT**

U.S. TSCA inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) INVENTORY List or exempt.
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.

SECTION 16 – OTHER INFORMATION

PREPARED BY:	Gus Kaklamanos - Chemist
TELEPHONE NO.:	416-261-7182
DATE OF THE LATEST REVISION OF SDS:	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.