



# MATERIAL SAFETY DATA SHEET (MSDS)

## Kleen-San

### Hand Sanitizer

### Germicides

Effective against influenza A (H1N1)



SECTION I ▶ PRODUCT IDENTIFICATION					
<b>Product Name</b>		<b>Product Type</b>		<b>WHMIS Classification</b>	
Kleen-San		Non-Alcohol Hand Sanitizer		Exempt	
SECTION II ▶ HAZARDOUS INGREDIENTS					
<b>Chemical Name</b>		<b>Cas Registry No.</b>	<b>%</b>	<b>Toxicity</b>	
Not Applicable					
SECTION III ▶ PHYSICAL DATA					
<b>Appearance</b>	<b>Odour</b>	<b>pH</b>	<b>Boiling Point</b>	<b>Specific Gravity</b>	<b>Solubility in Water</b>
Clear colourless liquid	Lemon	7.0	100 °C	1.0	100 %
SECTION IV ▶ FIRE AND EXPLOSION HAZARD DATA					
<b>Flash Point (°C):</b> None			<b>Extinguishing media:</b> Not Applicable		
<b>Special fire fighting procedures:</b> None					
<b>Unusual fire and explosion hazards:</b> None					
SECTION V ▶ TOXICOLOGICAL PROPERTIES					
<b>HAZARD RATING:</b> Health = 1 Flammability = 0 Reactivity = 0					<b>Rating System</b> 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme
<b>Swallowing:</b> Slightly Toxic					
<b>Inhalation:</b> Not Applicable					
<b>Skin Absorption:</b> Not Applicable					
<b>Skin Contact:</b> Slight Irritant					
<b>Eye Contact:</b> Slight Irritant					
<b>Special Warning:</b> None					
SECTION VI ▶ FIRST AID MEASURES					
<b>Ingestion:</b> Drink 3-4 glasses of milk or water.					
<b>Inhalation:</b> Not Applicable					
<b>Skin:</b> Flush with water.					
<b>Eyes:</b> Flush with water. If irritation persists, call a physician.					
SECTION VII ▶ REACTIVITY DATA					
<b>Stable:</b> Yes					
<b>Conditions to avoid:</b> None					
<b>Incompatibility with other materials:</b> None					
<b>Hazardous decomposition products:</b> None					
<b>Hazardous polymerization:</b> Will not occur.					
SECTION VIII ▶ PREVENTIVE MEASURES					
<b>Hand protection:</b> None					
<b>Eye protection:</b> None					
<b>Ventilation:</b> General					
<b>Respiratory protection:</b> None					
<b>Other protective equipment:</b> None					
<b>Steps to be taken in case material is released or spilled:</b> Mop up spillage. Rinse spill area with water and allow to dry.					
<b>Waste disposal method:</b> Flush with water into waste systems in accordance with municipal, provincial and federal regulations.					
<b>Precautions to be taken in handling and storage:</b> Normal handling processes. Inside storage at 4-40 °C recommended.					
<b>Other precautions:</b> Follow label use instructions.					
<b>UN:</b> Not Applicable		<b>TDG Class:</b> None		<b>Packing Group:</b> Not Applicable	
<b>TDG Emergency Telephone Number:</b> 613-996-666 (COLLECT)					
SECTION IX ▶ PREPERATION DATA					
<b>Prepared by:</b> D.R. Dunlop			<b>Last updated:</b> October 20, 2009		
<b>Location:</b> Dustbane Products Limited, 25 Pickering Place, Ottawa, Ontario, K1G 5P4 – 613-745-6861					

# Kleen-San

## Hand Sanitizer

"A ready-to-use, foaming hand sanitizer containing skin protecting emollients."

FEATURES AND BENEFITS
<b>Proven to Kill 99.9%:</b> Effective in less than 15 seconds.
<b>Environmentally Friendly:</b> APE, VOC and alcohol free
<b>Fast Drying:</b> Will dry in as few as 20 seconds.
<b>Soft on Hands:</b> Formulated with emollients for softer hands.
<b>Dye-Free</b>
<b>To Be Used in Bulk Dispenser</b>

WHERE TO USE
Use whenever and wherever hand sanitation is required.

HOW TO USE
Use as part of your daily cleansing routine. Apply a small amount of Kleen-San (the size of a loony) to the palm of your hand. Rub hands together until they are dry. No rinsing is required. Use as needed between hand washes to help reduce bacteria on the skin.
Kleen-San is suitable for food plant use. Do not store in food processing or food storage areas. Store between 4-40 °C.

SPECIFICATIONS
<b>Appearance:</b> Clear colourless liquid
<b>Fragrance:</b> Lemon
<b>Viscosity:</b> As water
<b>Actives %:</b> 0.2 % Benzethonium Chloride
<b>pH (conc.):</b> 7.0
<b>Solvent:</b> None
<b>Phosphate:</b> None
<b>WHMIS:</b> No
<b>TDG:</b> No
<b>CFIA Approval:</b> Pending

% KILL OF BACTERIA EXPOSED AT ONE MINUTE CONTACT TIME					
Organism	ATCC	NAHS	Organism	ATCC	NAHS
Staphylococcus aureus	6538	99.999%	Pseudomonas aeruginosa	15442	99.999%
Staphylococcus aureus	12228	99.999%	Salmonella typhi	6539	99.999%
Escherichia coli	11229	99.999%	Listeria monocytogenes	7644	99.995%
Escherichia coli 0157:H7	35150	99.999%	Serratia marcescens	14756	99.999%
Influenza A (H1N1)	VR1520	99.95%			

% KILL OF BACTERIA EXPOSED IN 15 SECOND TIME KILL ASSAY					
Organism	ATCC	NAHS	Organism	ATCC	NAHS
Escherichia coli	11229	99.999%	Salmonella choleraesuis	10708	99.999%
Staphylococcus aureus	6538	99.999%	Salmonella typhi	6539	99.999%
Staphylococcus aureus (MRSA)	33591	99.999%	Enterococcus faecalis (VRE)	51299	99.999%
Pseudomonas aeruginosa	15442	99.999%	Serratia marcescens	14756	99.999%

Kleen-San has been tested against a typical alcohol (62% alcohol) hand sanitizer in a thirty member human hand wash panel: fifteen tested Kleen-San against a control; fifteen tested the alcohol base sanitizer against a control. Both Kleen-San and the alcohol base sanitizer were effective in reducing the bacterial populations of *Escherichia coli* (ATCC# 11229) by LOG<sub>10</sub> 1.70 and 2.07 respectively after the first application and by LOG<sub>10</sub> 2.75 and 2.50 respectively after the fifth application. Neither product produced any visible signs of skin irritation to the hands. The data clearly indicates that Kleen-San was equally effective in reducing the microbial counts on contaminated hands as the proven alcohol hand sanitizer in a human clinical trial.