1 PRODUCT AND COMPANY INFORMATION

Product Name:	NC-1 Sanitizer
Product Code(s):	NC-1; NC-100
Uses:	Sanitizing Agent
Company:	EKaf Chemical, Inc.
Address:	123 Main Street; Utica, NY 13501
Telephone Number:	(315) 555-1234
Fax Number:	(315) 555-5678
Emergency Telephone Number:	(800) 262-8200
Date Issued:	April 7, 2008
Date Revised:	April 7, 2008

This MSDS complies with the OSHA Hazard Communication Standard 29CFR1910.1200, ANSI Z400.1-2004 and EC directive 2001/58/EC.

2 HAZARDS IDENTIFICATION

Hazard Overview:

DANGER!

Combustible.

Incidental contact may cause burns, irritation, redness or other transient effects. Contact may cause skin sensitization.

Prolonged, repeated contact, inhalation, ingestion or absorption through the skin may cause adverse effects to internal organ systems.

Physical State:	Liquid
Color:	Clear
Odor:	Solvent-like (alcohol)
Main Hazards:	Corrosive Dangerous for the environment
Routes of Entry:	Inhalation, ingestion, eye and skin contact, absorption.
Target Organs:	Eyes, skin, respiratory system, liver, kidneys, central nervous system.
Health Effects - Eyes:	Causes eye burns.
Health Effects - Skin:	Causes skin burns. May cause allergic skin reaction. Avoid prolonged or repeated contact with skin. Prolonged or repeated exposure may have the following effects: central nervous system depression, liver damage, kidney damage.
Health Effects - Ingestion:	Causes digestive tract burns. Repeated doses may have the following effects: central nervous system depression, liver damage, kidney damage. Aspiration into lungs can produce severe lung damage and is a medical emergency.
Health Effects - Inhalation:	Can enter lungs and cause damage. Higher concentrations may have the following effects: systemic effects similar to those resulting from ingestion.
Carcinogenic Status:	This product is not considered carcinogenic by IARC, NTP and OSHA.

2 HAZARDS IDENTIFICATION

Reproductive Effects: This product is not considered reproductively harmful.

Environmental Hazards: This product may be harmful to aquatic organisms. It may cause long-term adverse effects in the aquatic environment.

3 COMPOSITION / INGREDIENTS

Component	CAS Number	EC Number	Concentration	Hazards	Risks
Water	7732-18-5	231-791-2	80 – 90 %	None	None
Ethyl alcohol	64-17-5	200-578-6	1 – 3 %	F	R11
Isopropyl alcohol	67-63-0	200-661-7	1 – 2 %	F, Xi	R11, 36, 67
Potassium hydroxide	1310-58-3	215-181-3	3 – 4 %	C	R34
Halogenated phenol	Confidential	Confidential	5 – 6 %	Xi, N	R36/38, 43, 50

4 FIRST AID MEASURES

First Aid - Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

First Aid - Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately if irritation develops and persists.

First Aid - Ingestion: If swallowed, DO NOT induce vomiting. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

First Aid - Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Advice to Physician: Treat symptomatically.

5 FIRE FIGHTING MEASURES

Specific Hazards: This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Special Fire-Fighting Procedures: None recommended.

Unusual Fire & Explosion This material is combustible and can be ignited by heat, sparks, flames, or

5 FIRE FIGHTING MEASURES

Hazards:	other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.
Protective Equipment for Fire-Fighting:	Wear full protective clothing and self-contained breathing apparatus.
Additional Advice:	Pressure may build up in closed containers with possible liberation of combustible vapors.

6 ACCIDENTAL RELEASE MEASURES

Spill Procedures:	Contain spills immediately with inert materials (e.g., sand, earth). Transfer into suitable containers for recovery or disposal. Finally flush area with plenty of water.
Personal Precautions:	Wear suitable protective clothing. Wear respiratory protection. Eliminate all ignition sources.
Environmental Precautions:	Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

7 HANDLING AND STORAGE

Handling:	Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.
Storage:	Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.
Additional Advice:	Store in original container. Keep away from heat and sources of ignition. Storage area should be: cool, dry, well-ventilated and out of direct sunlight.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Standards:	Exposure limits are listed below, if they exist.
Water	Not applicable.
Ethyl alcohol:	ACGIH: 1000 ppm 8 h TLV-TWA.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

	OSHA: 1000 ppm (1900 mg/m3) PEL. UK: 1000 ppm TWA.
Isopropyl alcohol:	ACGIH: 200 ppm 8 h TLV-TWA. ACGIH: 400 ppm 15 min STEL OSHA: 400 ppm (980 mg/m3) PEL. UK: 400 ppm TWA. UK: 500 ppm STEL.
Potassium hydroxide:	ACGIH: 2 mg/m3 8 h TLV-TWA (ceiling). UK: 2 mg/m3 STEL.
Halogenated phenol:	Not applicable.
Engineering Control Measures:	Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust) and control of process conditions.
Respiratory Protection:	A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.
Hand Protection:	The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.
Eye Protection:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.
Body Protection:	Impervious clothing should be worn as needed.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear
Odor:	Solvent-like (alcohol)
Odor Threshold:	5 – 10 ppm (ethyl alcohol); 22 – 40 ppm (isopropyl alcohol)
pH:	> 12
Melting Point/Range (ºC/ºF):	< 0ºC
Boiling Point/Range (ºC/ºF):	> 78.5 ºC
Flash Point (PMCC) (ºC/ºF):	ca. 62ºC (Tag closed cup)
Evaporation Rate:	Slower than ether
Flammability / Explosivity Limits in Air (%):	Lower limit: 2.0% (v/v) at 25ºC (alcohol) Upper limit: 19.0% (v/v) at 25ºC (alcohol)
Vapor Pressure:	59.3 mmHg at 25ºC (ethyl alcohol) 44.4 mmHg at 25ºC (isopropyl alcohol)
Vapor Density (Air = 1):	Heavier than air

9 PHYSICAL AND CHEMICAL PROPERTIES

Relative Density:	ca. 1.00
Solubility in Water:	Completely soluble
Partition Coefficient:	Not available
Autoignition Temperature (ºC/ºF):	≥ 333ºC
Decomposition Temperature (ºC/ºF):	Not available
Viscosity:	Not available
Volatile Organic Content (VOC) (g/l):	> 110 g/l (as defined by 40CFR51.100)

10 STABILITY AND REACTIVITY

Reactivity:	Product will not undergo additional reaction.
Stability:	Stable under normal conditions.
Conditions to Avoid:	Contact with incompatible materials, excessive heat.
Incompatibilities:	Strong acids, oxidizing agents.
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition Products:	Oxides of carbon, hydrogen chloride, toxic by-products.

11 TOXICOLOGICAL INFORMATION

NOTE: If available, toxicity data for the product is given; otherwise component data is listed.

Acute Toxicity:	(Ethyl alcohol) Oral LD50 (rat) 7060 mg/kg (Ethyl alcohol) Inhalation LC50 (rat) 20000 ppm (10 hr) (Isopropyl alcohol) Oral LD50 (rat) 4.7 g/kg (Isopropyl alcohol) Dermal LD50 (rabbit) 12.9 g/kg (Potassium hydroxide) Oral LD50 (rat) 273-1230 mg/kg (Halogenated phenol) Oral LD50 (rat) 1700 mg/kg
Skin Corrosion / Irritation:	(Potassium hydroxide) Corrosive to skin.
Serious Eye Damage / Irritation:	(Potassium hydroxide) Corrosive to eyes.
Respiratory or Skin Sensitization:	(Halogenated phenol) Mice demonstrated a statistically significant dose dependent hypersensitivity response.
Mutagenicity:	(Ethyl alcohol) Not typically observed to be genotoxic. (Isopropyl alcohol) Not genotoxic in a variety of tests. (Halogenated phenol) No evidence of mutagenicity (Ames).
Carcinogenicity:	(Ethyl alcohol) There is no clear evidence of carcinogenicity in laboratory animals; however, it may act as a tumor promotor. (Halogenated phenol) There was an increased incidence of renal tubule adenomas or carcinomas in male mice.
Reproductive/Developmental Toxicity:	(Ethyl alcohol) Not typically shown to produce reproductive effects. Oral exposures produces malformations and developmental toxicity at levels which are maternally toxic. (Halogenated phenol) Developmental effects were not observed in

11 TOXICOLOGICAL INFORMATION

	rats. No abnormalities were found in rabbit fetuses studied.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Single Exposure:	(Isopropyl alcohol) May cause transient central nervous system depression.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Repeated Exposure:	(Ethyl alcohol) High doses caused liver injury. (Isopropyl alcohol) Changes in the liver and kidneys have been noted. (Halogenated phenol) In rats, there was an increase in the incidence and severity of nephropathy and renal tubule regeneration.
Aspiration Hazard:	(Ethyl alcohol) Alcohols may pose an aspiration hazard, if swallowed.
Additional Information:	None.

12 ECOLOGICAL INFORMATION

NOTE: If available, ecological data for the product is given; otherwise component data is listed.

Acute Ecotoxicity:	(Ethyl alcohol) LC50 (fathead minnows) 14.2 g/L/96 hr (Isopropyl alcohol) LC50 (fathead minnows) 6.12 g/L/96 hr (Halogenated phenol) LC50 (Rainbow trout) 0.72 ppm/96 hr (Halogenated phenol) EC50 (Daphnia magna) 0.59 ppm/48 hr
Mobility:	(Ethyl alcohol) Expected to have very high mobility based upon an estimated Koc of 1. (Isopropyl alcohol) Expected to have very high mobility based upon an estimated Koc of 25. (Halogenated phenol) Expected to have slight mobility based upon a Koc value of 2,050.
Persistence/Degradability:	(Ethyl alcohol) Biodegradation is expected to occur rapidly in the environment. (Isopropyl alcohol) Readily degraded in aerobic aqueous systems. (Halogenated phenol) Biodegradation half-life is approximately 1 to 3 days.
Bioaccumulation:	(Ethyl alcohol) An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. (Isopropyl alcohol) An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. (Halogenated phenol) A BCF value of 75 measured in fish, suggests bioconcentration in aquatic organisms is moderate.

13 DISPOSAL CONSIDERATION

Environmental precautions:	Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.
Product Disposal:	Dispose in accordance with all local, state (provincial), and federal regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting

13 DISPOSAL CONSIDERATION

	materials hazardous.
Container Disposal:	Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe manner.

14 TRANSPORT INFORMATION

DOT Proper Shipping Name:	Potassium hydroxide, solution
UN Number:	UN1814
UN Class:	8
UN Packaging Group:	III
Reportable Quantity:	Potassium hydroxide (1000 pounds)
Marine Pollutant:	Not applicable

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Consult current IATA Regulations prior to shipping by air.

15 REGULATORY INFORMATION

US Toxic Substance Control Act:	All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
Canadian Domestic Substance List:	All components of this product are in compliance with the inventory listing requirements of the Canadian Domestic Substance List.
EU Existing Inventory of Chemical Substances:	All components of this product are in compliance with the inventory listing requirements of the E.U. Existing Inventory of Chemical Substances (EINECS).
TSCA Sec.12(b) Export Notification:	This product does not contain a chemical at or above de minimis concentrations which requires reporting.
WHMIS Classification:	B.3 , D.2.B
Massachusetts Right-To-Know:	This product contains the following materials subject to disclosure under the Massachusetts' Right-To-Know Law: - Ethyl alcohol - Isopropyl alcohol - Potassium hydroxide
New Jersey Right-To-Know:	This product contains the following materials subject to disclosure under the New Jersey's Right-To-Know Law: - Ethyl alcohol (0844) - Isopropyl alcohol (1076) - Potassium hydroxide (1571)
Pennsylvania Right-To-Know:	This product contains the following materials subject to disclosure under the Pennsylvania's Right-To-Know Law: - Ethyl alcohol - Isopropyl alcohol - Potassium hydroxide

15 REGULATORY INFORMATION

California Proposition 65:	This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.	
SARA TITLE III-Section 311/312 Categorization (40 CFR 370):	Immediate, delayed, flammability hazard	
SARA TITLE III-Section 313 (40 CFR 372):	This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.	
CERCLA Hazardous Substance (40 CFR 302)	This product contains the following materials subject to reporting under section 304 of EPCRA: - Potassium hydroxide (1000 pounds)	
Water Hazard Class (WGK):	This product is slightly water-endangering (WGK=1).	
Other Chemical Inventories:	Australia (AICS):	All components listed.
	China (IECSC):	All components listed.
	Japan (ENCS):	All components listed.
	Korea (KCI):	All components listed.
	Philippines (PICCS):	All components listed.
EU Classification:	EC Symbols:	C – Corrosive
	EC Risk Phrases:	R34 – Causes burns. R43 – May cause sensitization by skin contact. R52 – Harmful to aquatic organisms. R53 – May cause long-term adverse effects in the aquatic environment. R67 – Vapours may cause drowsiness and dizziness.
	EC Safety Phrases:	S24/25 – Avoid contact with skin and eyes. S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S29 – Do not empty into drains. S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection. S45 – In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S57 – Use appropriate containment to avoid environmental contamination.

16 OTHER INFORMATION

NFPA Rating - HEALTH:	3	
NFPA Rating - FIRE:	2	
NFPA Rating - REACTIVITY:	0	
NFPA Rating - SPECIAL:	NONE	
Abbreviations:	CAS#:	Chemical Abstract Services Number

16 OTHER INFORMATION

ACGIH:	American Conference of Governmental Industrial Hygienists
OSHA:	Occupational Safety and Health Administration
NFPA:	National Fire Protection Association
DOT:	US Department of Transportation
RCRA:	US Resource Conservation and Recovery Act
TLV:	Threshold Limit Value
PEL:	Permissible Exposure Limit
STEL:	Short Term Exposure Limit
NTP:	National Toxicology Program
IARC:	International Agency for Research on Cancer
R:	Risk
S:	Safety
LD50:	Lethal Dose 50%
LC50:	Lethal Concentration 50%
EC50:	Effective Concentration 50%
BCF	Bioconcentration Factor
BOD:	Biological Oxygen Demand
Koc:	Soil Organic Carbon Partition Coefficient.
Tlm:	Median Tolerance Limit

Disclaimer: *The data contained herein is based on information that the company believes to be reliable, but no expressed or implied warranty is made with regard to the accuracy of such data or its suitability for a given situation. Such data relates only to the specific product described and not to such products in combination with any other product and no agent of the company is authorized to vary any of such data. The company and its agents disclaim all liability for any action taken or foregone on reliance upon such data.*

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