MATERIAL SAFETY DATA SHEET

SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME: Caustic Soda

PRODUCT USE: Oil Well Fluid Additive

CHEMICAL FAMILY: Alkali Hydroxide

WORK PLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: Class E & Class D-1(B)

WORK PLACE HAZARD: Corrosive & Poisonous

TRANSPORTATION OF DANGEROUS GOODS (TDG)

SHIPPING NAME: Sodium Hydroxide, Solid

TDG CLASSIFICATION: Class 8 (9.2)

UN NUMBER (PIN): UN1823

PACKING GROUP: II

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT(%)	CAS NUMBER	$LD_{(50)}$ Oral-Rat	OSHA PEL	ACGIH TLV
Sodium Hydroxide	100	1310-73-2		2 mg/m^3 Ceiling	2 mg/m^3 Ceiling

SECTION III: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY: **[XX] SKIN** **[XX] EYE CONTACT** **[XX] INHALATION** **[XX] INGESTION**

EYE CONTACT: Major potential hazard – Beads in the eye can cause severe destruction and blindness. These effects can occur rapidly affecting all parts of the eye. Mist or dust can cause irritation with high concentrations causing destructive burns.

SKIN CONTACT: Major potential hazard - Bead or liquid contact with the skin can cause severe burns with deep lacerations. Contact with dust or mist can cause multiple burns with temporary loss of hair at burn site. Solutions of up to 4% in water may not cause irritation and burning for several hours, while 25 - 50% solutions can cause these effects in less than 3 minutes.

INGESTION: Ingestion of sodium hydroxide can cause severe burning and pain in lips, mouth, tongue, throat and stomach. Severe scarring of the throat can occur after swallowing. Death can result from ingestion.

INHALATION: Inhalation of dust or mist can cause mild irritation at 2 mg/m^3. More severe burns and tissue damage of the upper respiratory tract can occur at higher concentrations.

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Pneumonitis can result from severe exposures.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT: Immediately wash contaminated areas with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear and wash clothing before reuse. Discard foot wear which cannot be decontaminated. Treat chemical burns as thermal burns. SEEK IMMEDIATE MEDICAL ATTENTION.

EYE CONTACT: FLUSH MATERIAL OUT IMMEDIATELY THEN SEEK IMMEDIATE MEDICAL ATTENTION. Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within several seconds of contact is essential to achieve maximum effectiveness.

INGESTION: Never give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. SEEK IMMEDIATE MEDICAL ATTENTION.

INHALATION: Remove to fresh air; if breathing is difficult, have trained person administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. GET IMMEDIATE MEDICAL ATTENTION.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	White solid or bead; odourless
SPECIFIC GRAVITY:	2.13 g/cc
BOILING POINT (°C):	138°C
MELTING POINT (°C):	318°C
SOLUBILITY IN WATER:	Complete
PERCENT VOLATILE BY VOLUME:	N/A
EVAPORATION RATE:	Not Volatile
VAPOUR PRESSURE (mm Hg):	N/A
pH:	13.0 (1% Solution)
VAPOUR DENSITY (Air = 1):	N/A

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	N/A
FLAMMABLE LIMITS:	N/A

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EXTINGUISHING MEDIA:	Water, Foam, Carbon Dioxide, Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURES:	Self contained breathing apparatus. If stored in area of fire, wear full protective clothing. Avoid eye contact.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	See Reactivity - Section VII

SECTION VII: REACTIVITY DATA

STABILITY: **Stable [XX]** **Unstable [ ]**

INCOMPATIBILITY (CONDITIONS TO AVOID):	Mixture with water, acid or incompatible materials can cause spattering and release of large amounts of heat. Will react in the presence of moisture with some metals forming flammable hydrogen gas.
CONDITIONS OF REACTIVITY:	Not Given.
HAZARDOUS DECOMPOSITION PRODUCTS:	Chlorinated and fluorinated hydrocarbons (i.e. chloroform, difluoroethane), acetaldehyde, acrolein, phosphorous pentoxide and tetrahydrofuran.
HAZARDOUS POLYMERIZATION:	Will Not Occur [XX] May Occur [ ]

VIII: PREVENTIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	NIOSH/MSHA approved respirator where dust, mist, or spray may be generated.
VENTILATION:	Local exhaust for dust, mist control
PROTECTIVE GLOVES:	Chemical resistant gloves: plastic or rubber
EYE PROTECTION:	Goggles plus full face shield
OTHER PROTECTIVE EQUIPMENT (Specify):	Impervious protective clothing and chemical resistant safety shoes. Showers and eyewash facilities in close proximity.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid contact with skin and avoid breathing dust. Do not eat, drink or smoke in work area. Wash hands prior to eating, drinking, or using bathroom. Any protective clothing, clothing or shoes which become contaminated with caustic should be removed immediately and thoroughly laundered before re-use.

Store in closed, properly labelled containers indoors in a dry area. Do not remove or deface labels or tags. When dissolving in water, use warm water but not exceeding 37.7 0C. Slowly add caustic to surface of water with constant stirring to avoid violent spattering. Full protective equipment as outlined above should be worn. Large amounts of heat will be evolved. Contact of caustic soda cleaning solutions with food and beverage products in enclosed vessels or spaces may produce lethal concentrations of carbon monoxide gas. Do not enter confined spaces such as tanks or pits without following proper entry procedures.

Do not re-use bags, drums or boxes without recycling or reconditioning in accordance with any applicable federal, provincial or local laws.

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STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Cleanup personnel must wear proper protective equipment. Reclaim into closed containers for normal use or disposal. Remaining material may be diluted with water and neutralized. Neutralization products, both liquid and solid must be recovered for disposal. Prevent runoff into ground or surface water or sewers. Reportable quantity is 1000 lbs. Notify Alberta Public

Safety Services (Edmonton: 422-9600 or 1-800-272-9600) of uncontrolled spills in excess of Reportable Quantity.

WASTE DISPOSAL METHOD

Recovered solids or liquids may be sent to a licensed reclaimer or disposed of in a permitted waste management facility. Consult federal, provincial, or local disposal authorities for approved procedures.

SECTION IX: PREPARATION

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE PRINTED:	**March 28, 2007**	**BY:**	**MILLENNIUM TECHNOLOGIES LTD.**
DATE MODIFIED:	**February 2007**	**APPROVED BY:**	
SUPERSEDES:	**May 2004**		
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