



KENCRO

CHEMICALS

PRODUCT: SODIUM HYDROXIDE SOLIDS (CAUSTIC SODA PWD)

SECTION 1: PRODUCT INFORMATION

T.D.G. CLASSIFICATION	8
UN NUMBER	1823
PACKING GROUP	II
PRODUCT NAME	CAUSTIC SODA MICROPEARLS (SODIUM HYDROXIDE)
CHEMICAL NAME	SODIUM HYDROXIDE
SYNONYMS	CAUSTIC FLAKE; CAUSTIC SODA; LYE; SODA LYE
WHMIS CLASSIFICATION	E
CHEMICAL FORMULA	NAOH
MOLECULAR WEIGHT	0.00 G/MOLE
CHEMICAL FAMILY	ALKALI HYDROXIDE
MATERIAL USE	ACID NEUTRALIZATION, METAL CLEANING, ETCHING AND ELECTROPLATING; SOAPS AND DETERGENTS; WATER TREATMENT

SECTION 2: HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	T.L.V.	C.A.S. #	LD/50,ROUTE,SPECIE	LC/50,ROUTE,SPECIE
SODIUM HYDROXIDE	100%	2 MG/M ³ CEIL	1310-73-2	N.AV.	N.AV.

SECTION 3: PHYSICAL DATA

PHYSICAL STATE	SOLID; WHITE SPHERES; DELIQUESCENT SOLID;
ODOUR	ODOURLESS
ODOUR THRESHOLD	N.AP.
VAPOUR PRESSURE	80 MBARR @ 1057°C
VAPOUR DENSITY (AIR=1)	N.AP.
EVAPORATION RATE	N.AP.
BOILING POINT	1390°C @ 1ATM
MELTING POINT	318.4°C
PH (1% SOLN/WATER)	13 (BASIC)
SPECIFIC GRAVITY (WATER=1)	2.13 @ 20°C
SOLUBILITY IN WATER	EASILY SOLUBLE UB COLD WATER, HOT WATER. SOLUBLE IN METHANOL. INSOLUBLE IN ACETONE.
COEFFICIENT OF WATER/OIL DIST.	N.AP.
PERCENT VOLATILE	N.AP.
COEFFICIENT WATER/OIL	N.AP.
PERCENT SOLUBLE	N.AV.
BULK DENSITY	1.12 KG/DM ³

SECTION 4: FIRE AND EXPLOSION DATA

FLAMMABILITY	NOT FLAMMABLE SODIUM HYDROXIDE OR ITS SOLUTIONS WILL NOT BURN OR SUPPORT COMBUSTION
IF YES, UNDER WHICH CONDITIONS?	
EXTINGUISHING MEDIA	THIS PRODUCT IS NOT FLAMMABLE. FOR FIRES INVOLVING THIS PRODUCT, WATER FOG, CARBON DIOXIDE CO ₂ , FOAM OR DRY CHEMICAL MAY BE USED

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SPECIAL PROCEDURES	WEAR NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS WHEN EITHER IN CONFINED AREAS OR EXPOSED TO COMBUSTION PRODUCTS
FLASH POINT(C), METHOD	N.AP.
AUTO IGNITION TEMPERATURE	N.AP.
T.D.G. FLAM. CLASS	NOT REGULATED
UPPER FLAMMABLE LIMIT(UFL) (% BY VOL)	N.AP.
LOWER FLAMMABLE LIMIT(LFL) (% BY VOL)	N.AP.
HAZARDOUS COMBUSTION PRODUCTS	NONE KNOWN
EXPLOSION DATA	
SENSITIVITY TO STATIC DISCHARGE	N.AV.
SENSITIVITY TO IMPACT	N.AV.
RATE OF BURNING	NONE
EXPLOSIVE POWER	N.AV.

SECTION 5: REACTIVITY DATA

CHEMICAL STABILITY	
YES	STABLE UNDER NORMAL CONDITIONS OF USE. PROTECT FROM HUMIDITY.
NO, WHICH CONDITIONS?	CAN SLOWLY PICK UP MOISTURE FROM AIR AND REACT WITH CO ₂ TO FORM SODIUM CARBONATE
COMPATIBILITY WITH OTHER SUBSTANCES:	
YES	
NO, WHICH ONES?	AVOID CONTACT WITH STRONG ACIDS, WATER, ORGANOHALOGEN COMPOUNDS, NITRO AND CHLORO ORGANIC COMPOUNDS. ALSO METALS SUCH AS ALUMINUM, ZINC, TIN AND COPPER. IT WILL ALSO REACT WITH BRONZE AND BRASS.
REACTIVITY CONDITIONS	MAY REACT VIOLENTLY WITH STRONG ACIDS. REACTION WITH WATER MAY GENERATE ENOUGH HEAT TO IGNITE COMBUSTIBLE MATERIALS. REACTION WITH METALS MAY PRODUCE FLAMMABLE AND EXPLOSIVE HYDROGEN GAS. MAY REACT WITH ORGANOHALOGEN COMPOUNDS TO FORM SPONTANEOUSLY COMBUSTIBLE COMPOUND. MAY REACT EXPLOSIVELY WITH NITRO AND CHLORO ORGANIC COMPOUNDS. HIGHLY REACTIVE WITH ORGANIC MATERIALS, METALS, ACIDS, ALKALIS, MOISTURE.
HAZARDOUS POLYMERIZATION CONDITIONS TO AVOID	WILL NOT OCCUR
HAZARDOUS PRODUCTS OF DECOMPOSITION	REFER TO REACTIVITY CONDITIONS. PROTECT FROM HUMIDITY
	N.AV.

SECTION 6: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY	
SKIN CONTACT	VERY HAZARDOUS IN CASE OF SKIN CONTACT. SKIN CONTACT CAN PRODUCE INFLAMMATION AND BLISTERING. CAN CAUSE SEVERE BURNS WITH DEEP ULCERATIONS AND PERMANENT SCARRING. SEVERITY DEPENDS ON CONCENTRATION AND DURATION OF EXPOSURE.
SKIN ABSORPTION	CAN PENETRATE DEEPER LAYERS OF THE SKIN.
EYE CONTACT	DAMAGE CAN RANGE FROM SEVERE IRRITATION AND MILD SCARRING TO BLISTERING, DISINTEGRATION, ULCERATION, SEVERE SCARRING AND CLOUDING. CONDITIONS AFFECTING VISION SUCH AS GLAUCOMA AND CATARACTS ARE POSSIBLE LATE DEVELOPMENTS. EYE CONTACT CAN RESULT IN CORNEAL DAMAGE OR BLINDNESS.
SEVERE INHALATION	SLIGHTLY HAZARDOUS IN CASE OF INHALATION (LUNG IRRITANT). MILD TO IRRITATION OF THE RESPIRATORY TRACT. ALSO IRRITATION OF THE NOSE, THROAT AND LUNGS WILL RESULT. SEVERE CASE OF PNEUMONITIS MAY OCCUR.
INHALATION, CHRONIC	REPEATED INHALATION OF DUST CAN PRODUCE VARYING DEGREE OF RESPIRATORY IRRITATION OR LUNG DAMAGE.
INGESTION	WILL CAUSE SEVERE PAIN, BURNING OF MOUTH, THROAT AND ESOPHAGUS RESULTING IN VOMITING, DIARRHEA AND POSSIBLY COLLAPSE AND DEATH
EFFECTS OF ACUTE EXPOSURE	REFER TO ROUTE OF ENTRY
EFFECTS OF CHRONIC EXPOSURE	VERY HAZARDOUS IN CASE OF SKIN CONTACT (CORROSIVE, PERMEATOR) OF INHALATION (LUNG IRRITANT).

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LD 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
LC 50 MATERIAL, SPECIES & ROUTE	SEE SECTION II
EXPOSURE LIMIT OF MATERIAL	SEE SECTION II
IRRITANCY OF MATERIAL	SEE ABOVE
SENSITIZING CAPABILITY OF MATERIAL	N.AV.
CARCINOGENICITY OF MATERIAL	N.AV.
REPRODUCTIVE TOXICITY	N.AV.
MUTAGENICITY	N.AV.
TERATOGENICITY	N.AV.
SYNERGISTIC MATERIALS	N.AV.

SECTION 7: PREVENTATIVE MEASURES

GLOVES/TYPE	WEAR IMPERVIOUS GLOVES
RESPIRATORY/TYPE	WEAR NIOSH/MSHA APPROVED CHEMICAL FILTER RESPIRATOR IF EXPOSED TO
DUST	PARTICLES DURING PRODUCT APPLICATION OR IF OCCUPATIONAL EXPOSURE LIMITS (TLV) ARE EXCEEDED
EYE/TYPE	WEAR CHEMICAL SAFETY GOGGLES AND FACESHIELD WITH SIDE SHIELDS
FOOTWEAR/TYPE	WEAR NITRILE OR NEOPRENE BOOTS
CLOTHING /TYPE	WEAR IMPERVIOUS PROTECTIVE SUIT TO PREVENT ANY POSSIBILITY OF SKIN CONTACT. SYNTHETIC APRON.
OTHER/TYPE	USE PROTECTIVE BARRIER SKIN CREAM IF CONTACT IS LIKELY. DISCARD LEATHER ARTICLES SUCH AS SHOES, WATCHBANDS, OR BELTS WHICH HAVE BEEN CONTAMINATED WITH THIS PRODUCT. REMOVE AND WASH CONTAMINATED CLOTHING BEFORE REUSE. WASH THOROUGHLY AFTER HANDLING. EYEBATH AND SAFETY SHOWER
ENGINEERING CONTROLS	GENERAL MECHANICAL VENTILATION SYSTEM IS ADEQUATE, HOWEVER LOCAL EXHAUST SYSTEM IS PREFERRED. CONTROL AIRBORNE CONCENTRATIONS BELOW THE EXPOSURE GUIDELINE.
LEAK/SPILL	
SMALL	WEAR NECESSARY PROTECTIVE CLOTHING AND EQUIPMENT. SWEEP UP WHILE AVOIDING DUST GENERATION. PLACE A PROPERLY LABELLED CONTAINER FOR LATER DISPOSAL. IF NECESSARY, <u>NEUTRALIZE THE RESIDUE WITH A DILUTE SOLUTION OF ACETIC ACID.</u>
LARGE	CORROSIVE SOLID. STOP LEAK IF WITHOUT RISK. <u>DO NOT GET WATER INSIDE CONTAINER. DO NOT TOUCH SPILLED MATERIAL. USE WATER SPRAY TO REDUCE VAPOURS. PREVENT ENTRY INTO SEWERS, BASEMENTS OR OTHER CONFINED AREAS; DIKE IF NEEDED. CALL FOR ASSISTANCE ON DISPOSAL. NEUTRALIZE THE RESIDUE WITH A DILUTE SOLUTION OF ACETIC ACID.</u> BE CAREFUL THAT THE PRODUCT IS NOT PRESENT AT A CONCENTRATION LEVEL ABOVE TLV. CHECK TLV ON THE MSDS AND WITH LOCAL AUTHORITIES. MAY REQUIRE A VACUUM. REMAINING TRACES SHOULD BE NEUTRALIZED WITH HYDROCHLORIC ACID OR ACETIC ACID DILUTED WITH WATER
WASTE DISPOSAL	INCINERATE IN AN APPROVED FACILITY. DISPOSAL SHALL BE IN ACCORDANCE TO ALL APPLICABLE FEDERAL, PROVINCIAL AND MUNICIPAL WASTE REGULATIONS
HANDLING PROCEDURES AND EQUIPMENT	DO NOT HANDLE UNLESS THE SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD. AVOID EYE AND SKIN CONTACT. AVOID INHALATION OF DUST OR VAPORS. DO NOT PUNCTURE, DRAG OR SLIDE CONTAINERS. DO NOT SMOKE IN ANY CHEMICAL HANDLING OR STORAGE AREA. WASH HANDS BEFORE EATING. KEEP CONTAINER CLOSED WHEN NOT IN USE. SPECIAL PRECAUTIONS FOR DILUTING CAUSTIC SODA SOLUTION: 1. ALWAYS ADD CAUSTIC SODA TO WATER WITH CONSTANT AGITATION. NEVER ADD WATER TO CAUSTIC SODA SOLUTION. 2. THE WATER SHOULD BE LUKE WARM (80-100 F). NEVER START WITH HOT OR COLD WATER. 3. ALWAYS ADD THE GRANULES TO THE WATER GRADUALLY, STIRRING CONSTANTLY. THE ADDITION OF CAUSTIC SODA TO LIQUID WILL CAUSE A RISE IN TEMPERATURE IF CAUSTIC SODA BECOMES CONCENTRATED IN ONE AREA, OR IS ADDED TOO RAPIDLY, OR IS ADDED TO HOT OR COLD LIQUID. A RAPID TEMPERATURE INCREASE CAN RESULT IN DANGEROUS MISTS OR BOILING OR SPLATTERING WHICH MAY CAUSE AN IMMEDIATE VIOLENT ERUPTION.
STORAGE NEEDS	STORE IN A COOL, DRY AND WELL-VENTILATED LOCATION. PROTECT FROM HUMIDITY. KEEP CONTAINERS TIGHTLY CLOSED. STORE AWAY FROM INCOMPATIBLE MATERIALS AND SUNLIGHT
SPECIAL SHIPPING INSTRUCTIONS	SEE SECTION 1 TDG CLASSIFICATION

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SECTION 8: FIRST AID MEASURES

INSTRUCTIONS:

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING. PLACE VICTIM UNDER A DELUGE SHOWER. IMMEDIATELY WASH AFFECTED SKIN AREA WITH WATER AND RINSE THOROUGHLY WITH FLOWING WATER FOR AT LEAST 15 MINUTES. GENTLY AND THOROUGHLY WASH THE CONTAMINATED SKIN WITH RUNNING WATER AND NON-ABRASIVE SOAP. BE PARTICULARLY CAREFUL TO CLEAN FOLDS, CREVICES, CREASE AND GROINS. COLD WATER MAY BE USED. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. WAS CONTAMINATED CLOTHING BEFORE REUSE. WASH WITH A DISINFECTANT SOAP AND COVER THE CONTAMINATED SKIN WITH ANTIBACTERIAL CREAM.

EYE CONTACT: CHECK FOR AND REMOVE CONTACT LENSES. FLUSH EYES IMMEDIATELY WITH FLOWING WATER FOR AT LEAST 15 MINUTES WHILE KEEPING THE UPPER AND LOWER EYELIDS APART. COLD WATER MAY BE USED. DO NOT USE AN EYE OINTMENT. SEE MEDICAL ATTENTION.

INGESTION: GIVE WATER OR MILK. DO NOT INDUCE VOMITING. EXAMINE THE LIPS AND MOUTH TO ASCERTAIN WHETHER THE TISSUES ARE DAMAGED, A POSSIBLE INDICATION THAT THE TOXIC MATERIAL WAS INGESTED; THE ABSENCE OF SUCH SIGNS, HOWEVER, IS NOT CONCLUSIVE. LOOSEN TIGHT CLOTHING SUCH AS A COLLAR, TIE, BELT OR WAISTBAND. IF THE VICTIM IS NOT BREATHING, PERFORM MOUTH-TO-MOUTH RESUSCITATION. SEEK IMMEDIATE MEDICAL ATTENTION.

SLIGHT INHALATION: MOVE VICTIM TO FRESH AIR. SEEK MEDICAL ATTENTION.

HAZARDOUS INHALATION: EVACUATE THE VICTIM TO A SAFE AREA AS SOON AS POSSIBLE. LOOSEN TIGHT CLOTHING SUCH AS A COLLAR, TIE, BELT OR WAISTBAND. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF THE VICTIM IS NOT BREATHING, PERFORM MOUTH-TO-MOUTH RESUSCITATION. WARNING: IT MAY BE HAZARDOUS TO THE PERSON PROVIDING AID TO GIVE MOUTH-TO-MOUTH RESUSCITATION WHEN THE INHALED MATERIAL IS TOXIC, INFECTIOUS OR CORROSIVE. SEEK IMMEDIATE MEDICAL ATTENTION.

SPECIAL NOTE: NEVER GIVE FLUIDS OR INDUCE VOMITING TO AN UNCONSCIOUS VICTIM. PLACE VICTIM IN A STABLE SIDE POSITION AND KEEP WARM.

SECTION 9: PREPARATION INFORMATION

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DATE	JUNE 2008

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LEGEND:

CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
LFL	LOWER FLAMMABLE LIMIT
MSHA	MINE SAFETY AND HEALTH ADMINISTRATION
N.AP.	NOT APPLICABLE
N. AV.	NOT AVAILABLE
NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
TDG	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
TLV	THRESHOLD LIMIT VALUE
UFL	UPPER FLAMMABLE LIMIT
WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM