



MATERIAL SAFETY DATA SHEET

KEM CANADA MFG.
4 BLAIR DRIVE
BRAMPTON, ONTARIO
L6T 2H5
TEL# (905) 456-9444

EMERGENCY # CANUTEC (613) 996-6666
"USE IN CASE OF CHEMICAL EMERGENCY ONLY"

W.H.M.I.S. CLASSIFICATION: B3, D1B, E

MATERIAL REFERENCE NO: 574400

SECTION I - MATERIAL IDENTIFICATION AND USE

MATERIAL NAME/I.D.: RT-744	
CHEMICAL NAME: NOT APPLICABLE	CHEMICAL FAMILY: ALKALINE BLEND
CHEMICAL FORMULA: MIXTURE	MOLECULAR WEIGHT: NOT APPLICABLE
SYNONYMS: NONE	
MATERIAL USE: RETURN LINE TREATMENT	

SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

HAZARDOUS INGREDIENTS	APPROX. % CONCENT.	TLV PPM	C.A.S. NUMBERS	LD 50 ORAL, RAT
MORPHOLINE	3.0-7.0	20	110-91-8	1450 MG/KG

SECTION III - PHYSICAL DATA FOR MATERIAL

PHYSICAL STATE: LIQUID	
ODOUR AND APPEARANCE: CLEAR, COLOURLESS LIQUID; AMINE ODOUR.	
ODOUR THRESHOLD (PPM)	SPECIFIC GRAVITY
0.1	1.001
VAPOUR DENSITY (AIR=1)	EVAPORATION RATE
NOT ESTABLISHED	(WATER = 1) 1.0
SOLUBILITY IN WATER	
(20°C) COMPLETE	
BOILING POINT (C)	FREEZING POINT (C)
>100 (EST.)	<0
% VOLATILE (BY WEIGHT)	
100	
pH (10% SOLUTION)	DENSITY (G/ML)
10.0-11.0	NOT APPLICABLE
COEF.OF WATER/OIL DISTR	
NOT AVAILABLE	



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SECTION IV - FIRE AND EXPLOSION HAZARD OF MATERIAL

FLAMMABILITY: FLAMMABLE			
IF YES, UNDER WHICH CONDITIONS: VAPOURS MAY BE FLAMMABLE.			
MEANS OF EXTINCTION: ALCOHOL FOAM, CO2, WATER SPRAY, DRY CHEMICAL.			
SPECIAL PROCEDURES: WEAR FULL PROTECTIVE GEAR INCLUDING SELF-			
CONTAINED BREATHING APPARATUS. VAPOURS ARE HEAVIER THAN AIR AND MAY			
TRAVEL TO IGNITION SOURCE AND FLASH BACK.			
FLASH POINT (C) AND METHOD: MINIMUM 60 TCC			
HAZARDOUS COMBUSTION PRODUCTS: MAY EVOLVE NITROGEN OXIDES, CARBON			
DIOXIDE, CARBON MONOXIDE, AMMONIA, ALDEHYDES, KETONES, IRRITATING			
VAPOURS.			
UPPER EXPLOSION LIMIT LOWER EXPLOSION LIMIT AUTOIGNITION TEMP (C)			
1.8 (MORPHOLINE) 10.8 (MORPHOLINE) NOT AVAILABLE			
EXPLOSION DATA SENSITIVITY RATE OF BURNING EXPLOSIVE POWER			
TO CHEMICAL IMPACT			
NOT AVAILABLE NOT AVAILABLE NOT AVAILABLE			
SENSITIVITY TO STATIC DISCHARGE: NOT AVAILABLE			

SECTION V - REACTIVITY DATA

CHEMICAL STABILITY: STABLE			
IF NO, UNDER WHICH CONDITIONS:			
INCOMPATIBILITY TO OTHER SUBSTANCES: YES			
IF SO, WHICH ONES: STRONG ACIDS, OXIDIZING AGENTS, NITRITES AND			
OTHER NITROSATING AGENTS.			
REACTIVITY AND UNDER WHAT CONDITIONS: NITROSAMINE MAY BE FORMED WHEN			
MIXED WITH NITRITES OR OTHER NITROSATING AMINES. NITROSAMINES MAY			
CAUSE CANCER.			
HAZARDOUS POLYMERIZATION WILL NOT OCCUR.			
HAZARDOUS DECOMPOSITION PRODUCTS: NITROUS OXIDES, CARBON MONOXIDE,			
CARBON DIOXIDE, AMMONIA, ALDEHYDES, KETONES, IRRITATING VAPOURS.			

SECTION VI - HEALTH HAZARD DATA

ROUTE OF ENTRY:			
SKIN CONTACT: YES SKIN ABSORPTION: YES EYE CONTACT: YES			
INHALATION: YES INGESTION: YES			



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EFFECTS OF ACUTE EXPOSURE TO MATERIAL:
EYES-MAY CAUSE SEVERE IRRITATION, INTENSE WATERING, REDNESS. MAY
CAUSE CHEMICAL BURNS, EYE DAMAGE.
SKIN-MAY CAUSE IRRITATION, INFLAMMATION, REDNESS, POSSIBLE BURNS.
PROLONGED OR REPEATED CONTACT MAY RESULT IN ABSORPTION OF POTENTIALLY
HARMFUL AMOUNTS.
INHALATION-MAY CAUSE IRRITATION OF NOSE, EYES AND THROAT, COUGHING,
DIFFICULTY IN BREATHING. EXCESSIVE INHALATION MAY CAUSE BRONCHITIS,
PULMONARY EDEMA AND CHEMICAL PNEUMONITIS.
INGESTION-MAY CAUSE IRRITATION AND BURNING SENSATION OF LIPS, MOUTH
AND THROAT, PAIN IN SWALLOWING, GASTRO-INTESTINAL IRRITATION,
ABDOMINAL PAIN, NAUSEA AND VOMITING.

EFFECTS OF CHRONIC EXPOSURE TO MATERIAL: PROLONGED EXPOSURE MAY
CAUSE KIDNEY AND/OR LIVER DAMAGE.

LD 50 OF MATL.	LC 50 OF MATL.	EXPOSURE LIMIT(S)	IRRITANCY OF MATL
NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	TOXIC

SENSITIZATION OF MATERIAL	SYNERGISTIC MATERIALS
NOT AVAILABLE	NOT AVAILABLE

CARCINOGENICITY, REPRODUCTIVE EFFECTS, TERATOGENICITY, MUTAGENICITY
NONE KNOWN.
MORPHOLINE MAY REACT WITH NITRITES TO FORM N-NITROSAMINES (KNOWN
CARCINOGENS)

SECTION VII - PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:
GLOVES: BUTYL RUBBER, NITILE
RESPIRATORY: NIOSH APPROVED FOR ORGANIC VAPOURS.
EYE: FACE SHIELD OR SAFETY GOGGLES
CLOTHING: LONG SLEEVED SHIRTS, TROUSERS, BUTYL RUBBER BOOTS AND
APRON.
OTHER: EYE WASH AND SAFETY SHOWER
ENGINEERING CONTROLS (EG VENTILATION, ENCLOSED PROCESS): MECHANICAL
RECOMMENDED TO MAINTAIN CONCENTRATION BELOW TLV.

LEAK AND SPILL PROCEDURE: WEAR RECOMMENDED PERSONAL PROTECTIVE
EQUIPMENT. REMOVE IGNITION SOURCES. STOP LEAKS AND CONTAIN SPILL.
RECLAIM IF POSSIBLE. ABSORB ONTO NON-COMBUSTIBLE ABSORBENT AND PLACE
IN APPROVED CONTAINER FOR DISPOSAL. DO NOT ALLOW LIQUID TO FLOW INTO
WATERWAYS. PRODUCT IS EXPECTED TO BE TOXIC TO AQUATIC LIFE.

WASTE DISPOSAL: DISPOSE IN ACCORDANCE WITH LOCAL, PROVINCIAL AND
FEDERAL REGULATIONS.



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SECTION VIII - FIRST AID MEASURES

| PROCEDURES: EYES-IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR AT |
| LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET IMMEDIATE MEDICAL |
| ATTENTION. |
| SKIN-REMOVE CONTAMINATED CLOTHING AND FLUSH AFFECTED AREA WITH |
| WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION. LAUNDER |
| CLOTHING BEFORE REUSE. |
| INHALATION-MOVE VICTIM TO FRESH AIR. IF BREATHING IS DIFFICULT, GIVE |
| OXYGEN. GET MEDICAL ATTENTION. |
| INGESTION-DO NOT INDUCE VOMITING. SLOWLY GIVE 1-2 GLASSES OF WATER |
| OR MILK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR |
| CONVULSING PERSON. GET IMMEDIATE MEDICAL |
| SOURCES USED: RAW MATERIAL SUPPLIER'S MATERIAL SAFETY DATA SHEETS |
| ADDITIONAL INFORMATION: NONE |

SECTION IX - TDG SHIPPING INFORMATION

SHIPPING NAME	CLASS	UN NO.	PG
CORROSIVE LIQUID, FLAMMABLE, N.O.S. (MORPHOLINE)	8(3)	2920	II

| HANDLING PROCEDURES AND EQUIPMENT: AVOID CONTACT WITH EYES, SKIN AND |
| CLOTHING. USE IN ADEQUATELY VENTILATED AREAS. WASH THOROUGHLY AFTER |
| HANDLING. |

| STORAGE REQUIREMENTS: STORE IN A COOL, DRY WELL VENTILATED AREA IN |
| ORIGINAL CONTAINER. STORE AWAY FROM INCOMPATIBLE MATERIALS. KEEP |
| CONTAINER CLOSED WHEN NOT IN USE. |

| SPECIAL SHIPPING INFORMATION: NONE |

SECTION X - HMIS HAZARD RATING INFORMATION

FLAMMABILITY	REACTIVITY	HEALTH
3	0	2

SECTION XI - PREPARATION DATE OF MSDS

| PREPARED BY: TECHNICAL DEPARTMENT TELEPHONE # (905) 456-9444 |
| REVIEWED: OCTOBER 10, 2009 |

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