SAFETY DATA SHEET

PRODUCT: THERMASEAL

SECTION 01: PRODUCT AND COMPANY INFORMATION

MANUFACTURER/SUPPLIER	LES INVESTISSEMENTS B.S.C. INC.
MANUFACTURER'S/SUPPLIERS ADDRESS	109 IBER RD., UNIT #3, OTTAWA, ON K2S 0X5 613-744-8896
PRODUCT NAME	THERMASEAL
PRODUCT USE	FLOOR SEALER
EMERGENCY PHONE NUMBER	CANUTECH 613-996-6666

SECTION 02: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:

SKIN CONTACT	SLIGHT SKIN IRRITATION.
SKIN ABSORPTION	N.AV.
EYE CONTACT	CAUSES EYE IRRITATION.
INHALATION	MAY CAUSE IRRITATION OF THE NOSE AND THROAT WITH HEADACHE, PARTICULARLY FROM MISTS. HIGH VAPOUR CONCENTRATIONS (CAUSED, FOR EXAMPLE BY HEATING THE MATERIAL IN AN ENCLOSED AND POORLY VENTILATED WORKPLACE) MAY PRODUCE NAUSEA, VOMITING, HEADACHE, DIZZINESS, AND IRREGULAR EYE MOVEMENTS.
INGESTION	MAY CAUSE ABDOMINAL DISCOMFORT OR PAIN, NAUSEA, VOMITING, DIZZINESS, DROWSINESS, MALAISE, BLURRING OF VISION, IRRITABILITY, LUMBAR PAIN, OLIGURIA, UREMIA, AND CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING IRREGULAR EYE MOVEMENTS, CONVULSIONS, AND COMA. CARDIAC FAILURE AND PULMONARY OEDEMA MAY DEVELOP. SEVERE KIDNEY DAMAGE FOLLOWS THE SWALLOWING OF LARGE VOLUMES OF ETHYLENE GLYCOL. MAY BE FATAL. FEW REPORTS HAVE BEEN PUBLISHED DESCRIBING THE DEVELOPMENT OF WEAKNESS OF THE FACIAL MUSCLES, DIMINISHED HEARING, AND DIFFICULTY WITH SWALLOWING, DURING THE LATE STAGES OF SEVERE POISONING.
EFFECTS/SYMPTOMS OF ACUTE EXPOSURE	SEE ABOVE.
EFFECTS/SYMPTOMS OF CHRONIC EXPOSURE	ETHYLENE GLYCOL: \REPEATED CONTACT WITH THE SKIN MAY CAUSE DERMATITIS IN SENSITIVE INDIVIDUALS. THE INCIDENCE IS SIGNIFICANTLY LESS THAN 1% WITH THE UNDILUTED MATERIAL. ETHYLENE GLYCOL HAS BEEN SHOWN TO PRODUCE DOSE-RELATED TERATOGENIC EFFECTS IN RATS AND MICE WHEN GIVEN BY GAVAGE OR IN DRINKING WATER AT HIGH CONCENTRATIONS OR DOSES. THE NO-EFFECT DOSES FOR DEVELOPMENTAL TOXICITY FOR ETHYLENE GLYCOL GIVEN BY GAVAGE OVER THE PERIOD OF ORGANOGENESIS HAS BEEN SHOWN TO BE 150 MG/KG/DAY FOR THE MOUSE AND 500 MG/KG/DAY FOR THE RAT. ALSO , IN A PRELIMINARY STUDY TO ASSESS THE EFFECTS OF EXPOSURE OF PREGNANT RATS AND MICE TO AEROSOLS AT CONCENTRATIONS 150, 1000 AND 2500 MG/M3 FOR 6 HOURS A DAY THROUGHOUT THE PERIOD OF ORGANOGENESIS, TERATOGENIC EFFECTS WERE PRODUCED AT THE HIGHEST CONCENTRATION, BUT ONLY IN MICE. THE CONDITIONS OF THESE LATTER EXPERIMENTS DID NOT ALLOW A CONCLUSION AS TO WHETHER THE DEVELOPMENTAL TOXICITY WAS MEDIATED BY INHALATION OF AEROSOL, PERCUTANEOUS ABSORPTION OF ETHYLENE GLYCOL FROM CONTAMINATED SKIN, OR SWALLOWING OF ETHYLENE GLYCOL AS A RESULT OF GROOMING THE WETTED COAT. IN A FURTHER STUDY, COMPARING EFFECTS FROM HIGH AEROSOL CONCENTRATION BY WHOLE-BODY OR NOSE-ONLY EXPOSURE, IT WAS SHOWN THAT NOSE-ONLY EXPOSURE RESULTED IN MATERNAL TOXICITY (1000 AND 2500 mg/m3) AND DEVELOPMENTAL TOXICITY WITH MINIMAL EVIDENCE OF TERATOGENICITY (2500 MG/M3). IN A FURTHER STUDY IN MICE, NO TERATOGENIC EFFECTS COULD BE PRODUCED WHEN ETHYLENE GLYCOL WAS APPLIED TO THE SKIN OF PREGNANT MICE OVER A PERIOD OF ORGANOGENESIS. THE ABOVE OBSERVATIONS SUGGEST

THAT ETHYLENE GLYCOL IS TO BE REGARDED AS AN ANIMAL TERATOGEN; THERE IS CURRENTLY NO AVAILABLE INFORMATION TO SUGGEST THAT ETHYLENE GLYCOL HAS CAUSED BIRTH DEFECTS IN HUMANS. CUTANEOUS APPLICATION OF ETHYLENE GLYCOL IS INEFFECTIVE IN PRODUCING DEVELOPMENTAL TOXICITY; EXPOSURE TO HIGH AEROSOL CONCENTRATION IS ONLY MINIMALLY EFFECTIVE IN PRODUCING DEVELOPMENTAL TOXICITY; THE MAJOR ROUTE FOR PRODUCING DEVELOPMENTAL TOXICITY IS PERORALLY. TWO CHRONIC FEEDING STUDIES, USING RATS AND MICE, HAVE NOT PRODUCED ANY EVIDENCE THAT ETHYLENE GLYCOL CAUSES DOSE-RELATED INCREASES IN TUMOR INCIDENCE, OR A DIFFERENT PATTERN OF TUMORS COMPARED TO UNTREATED CONTROLS. THE ABSENSE OF A CARCINOGENIC POTENTIAL FOR ETHYLENE GLYCOL HAS BEEN SUPPORTED BY NUMEROUS IN VITRO GENOTOXICITY STUDIES SHOWING THAT IT DOES NOT PRODUCE MUTAGENIC OR CLASTOGENIC EFFECTS. INHALATION OF MIST MAY PRODUCE SIGNS OF CENTRAL NERVOUS SYSTEM INVOLVEMENT, PARTICULARLY DIZZINESS AND NYSTAGMUS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE..... KIDNEY DISEASE.

SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS HAZARDS IDENTIFICATION

HAZARDOUS INGREDIENTS	C.A.S. #	%	TLV	LD50	LC50
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	1 - 5	N.AV.	7292 MG/KG (ORAL-RAT), 2406 MG/KG (ORAL-MOUSE); 2764 MG/KG (DERMAL-RABBIT).	N.AV.
ETHYLENE GLYCOL	107-21-1	1 - 5	50 PPM TWA - CEILING (ACGIH).	4700 MG/KG (ORAL-RAT); 9530 MG/KG (DERMAL-RABBIT).	10.9 G/KG (RAT).
DIBUTYL PHTHALATE	84-74-2	1 - 5	5 MG/M3, TWA, ACGIH; 5 MG/M3, PEL, OSHA.	20,000 - 25,000 MG/KG. (ORAL-RAT). >20,960 MG/KG. >20 ML/KG (HIGHEST DOSE TESTED). (DERMAL-RABBIT). >2,096 MG/KG. >2 ML/KG (HIGHEST DOSE TESTED). (DERMAL-GUINEA PIG).	N.AV.

SECTION 04: FIRST AID MEASURES

SKIN CONTACT ..... REMOVE ANY CONTAMINATED CLOTHING AND WASH AFFECTED AREA WITH PLENTY OF SOAP AND WATER. WASH CLOTHING AND DECONTAMINATE SHOES BEFORE REUSE. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.

EYE CONTACT..... IMMEDIATELY FLUSH EYES WITH LUKEWARM WATER FOR AT LEAST 30 MINUTES, FORCIBLY HOLDING EYELIDS APART. SEEK MEDICAL ATTENTION URGENTLY, PREFERABLY FROM AN OPHTHALMOLOGIST.

INHALATION..... REMOVE TO FRESH AIR. AID IN BREATHING, IF NECESSARY. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.

INGESTION ..... HAVE VICTIM DRINK TWO GLASSES OF WATER. NEVER GIVE

	ANYTHING BY MOUTH IF THE VICTIM IS UNCONSCIOUS. INDUCE VOMITING IF CONSCIOUS. GET MEDICAL ATTENTION WITHOUT DELAY.
NOTES TO PHYSICIAN.....	ETHYLENE GLYCOL: IT IS ESTIMATED THAT THE LETHAL ORAL DOSE TO ADULTS IS OF THE ORDER OF 1.0-1.2 ML/KG. THIS GLYCOL PRODUCES METABOLITES THAT CAUSE AN ELEVATED ANION-GAP METABOLIC ACIDOSIS AND RENAL TUBULAR INJURY. LIVER INJURY MAY OCCUR, BUT NOT AS SEVERE AS KIDNEY INJURY. THE SIGNS AND SYMPTOMS IN GLYCOL POISONING ARE THOSE OF METABOLIC ACIDOSIS, CNS DEPRESSION, AND KIDNEY INJURY. URINALYSIS MAY SHOW ALBUMINURIA, HEMATURIA, AND OXALURIA. THE CURRENTLY RECOMMENDED MEDICAL MANAGEMENT OF GLYCOL POISONING INCLUDES ELIMINATION OF THE GLYCOL AND ITS METABOLITES, CORRECTION OF METABOLIC ACIDOSIS, AND PREVENTION OF KIDNEY INJURY. IT IS ESSENTIAL TO HAVE IMMEDIATE AND FOLLOW-UP URINALYSIS AND CLINICAL CHEMISTRY. THERE SHOULD BE PARTICULAR EMPHASIS ON ACID-BASE BALANCE, AND LIVER AND KIDNEY FUNCTION TESTS. THE PRINCIPAL TOXIC EFFECTS OF ETHYLENE GLYCOL, WHEN SWALLOWED ARE KIDNEY DAMAGE AND METABOLIC ACIDOSIS. ETHANOL IS ANTIDOTAL, AND ITS EARLY ADMINISTRATION MAY BLOCK THE FORMATION OF NEPHROTOXIC METABOLITES OF ETHYLENE GLYCOL IN THE LIVER. A DESIRED THERAPEUTIC LEVEL OF ETHANOL IN BLOOD IS 100-150 MG/DL AND SHOULD BE ACHIEVED BY A RAPID LOADING DOSE AND MAINTAINED BY INTRAVENOUS INFUSION. FOR SEVERE AND/OR DETERIORATING CASES, HEMODIALYSIS MAY BE REQUIRED. DIALYSIS SHOULD BE CONSIDERED FOR PATIENTS WHO ARE SYMPTOMATIC, HAVE SEVERE METABOLIC ACIDOSIS, A BLOOD ETHYLENE GLYCOL CONCENTRATION GREATER THAN 25 MG/DL, OR COMPROMISE OF RENALRFUNCTIONS. 4-METHYLPYRAZOLE, A POTENT INHIBITOR OF ALCOHOL DEHYDROGENASE, HAS BEEN EFFECTIVELY USED TO DECREASE THE METABOLIC CONSEQUENCES OF ETHYLENE GLYCOL POISONING BEFORE COMA, SEIZURE, AND RENAL FAILURE HAVE OCCURRED. ADDITIONAL THERAPEUTIC MEASURES MAY INCLUDE THE ADMINISTRATION OF COFACTORS INVOLVED IN THE METABOLISM OF ETHYLENE GLYCOL. THIAMINE (100MG) AND PYRIDOXINE (50MG) SHOULD BE GIVEN EVERY SIX HOURS. PULMONARY OEDEMA WITH HYPOXEMIA HAS BEEN DESCRIBED IN A NUMBER OF PATIENTS FOLLOWING POISONING WITH ETHYLENE GLYCOL. THE MECHANISM OF PRODUCTION HAS NOT BEEN ELUCIDATED, BUT IT APPEARS TO BE NONCARDIOGENIC IN ORIGIN IN SEVERAL CASES. RESPIRATORY SUPPORT WITH MECHANICAL VENTILATION AND POSITIVE END-EXPIRATORY PRESSURE MAY BE REQUIRED. THERE MAY BE CRANIAL NERVE INVOLVEMENT IN THE LATE STAGES OF TOXICITY FROM SWALLOWED ETHYLENE GLYCOL. IN PARTICULAR, EFFECTS HAVE BEEN REPORTED INVOLVING THE SEVENTH, EIGHTH AND NINTH CRANIAL NERVES, PRESENTING WITH BILATERAL FACIAL PARALYSIS, DIMINISHED HEARING, AND DYSPHAGIA.

SECTION 05: FIRE FIGHTING MEASURES

CONDITIONS OF FLAMMABILITY.....	NON-FLAMMABLE.
MEANS OF EXTINCTION/EXTINGUISHING MEDIA: ..	WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE, ALCOHOL FOAM.
FLASH POINT.....	>100 (C).
UPPER FLAMMABLE LIMIT (% BY VOLUME).....	N.AV.
LOWER FLAMMABLE LIMIT (% BY VOLUME).....	N.AV.
AUTO-IGNITION TEMPERATURE	N.AV.
SPECIAL FIRE FIGHTING PROCEDURES.....	FIRE FIGHTERS SHOULD WEAR FULL PROTECTIVE CLOTHING, INCLUDING SELF-CONTAINED BREATHING EQUIPMENT.
UNUSUAL FIRE AND EXPLOSION HAZARDS.....	MAY FORM PEROXIDES OF UNKNOWN STABILITY.
EXPLOSION DATA.....	N.AV.
SENSITIVITY TO MECHANICAL IMPACT	N.AV.
SENSITIVITY TO STATIC DISCHARGE	N.AV.

HAZARDOUS COMBUSTION PRODUCTS	BURNING CAN PRODUCE CARBON MONOXIDE. CARBON DIOXIDE. CARBON MONOXIDE IS HIGHLY TOXIC IF INHALED; CARBON DIOXIDE IN SUFFICIENT CONCENTRATIONS CAN ACT AS AN ASPHYXIANT.

SECTION 06: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES.....	USE PERSONAL PROTECTIVE EQUIPMENT. ABSORB SPILL WITH VERMICULITE OR OTHER INERT MATERIAL, THEN PLACE IN A CONTAINER FOR CHEMICAL WASTE. LARGE SPILLS: FLUSH AREA WITH WATER SPRAY. PREVENT RUNOFF FROM ENTERING DRAINS, SEWERS, OR STREAMS.

SECTION 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND EQUIPMENT.....	AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. DO NOT SWALLOW. AVOID BREATHING MIST. AVOID BREATHING VAPOURS. WEAR PROTECTIVE EQUIPMENT DURING HANDLING. MAINTAIN A GOOD PERSONAL HYGIENE. KEEP CONTAINERS CLOSED OR SEALED. USE ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. KEEP FROM CONTACT WITH OXIDIZING MATERIALS.
STORAGE REQUIREMENTS.....	STORE IN A COOL, DRY, WELL-VENTILATED PLACE. KEEP THE CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. STORE AWAY FROM HEAT AND LIGHT.

SECTION 08: EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROL.....	GOOD GENERAL VENTIALTION (TYPICALLY 10 AIR CHANGES PER HOUR) SHOULD BE USED. VENTILATION RATES SHOULD BE MATCHED TO CONDITIONS. SUPPLEMENTARY LOCAL EXHAUST VENTILATION, CLOSED SYSTEMS, OR RESPIRATORY AND EYE PROTECTION MAY BE NEEDED IN SPECIAL CIRCUMSTANCES - SUCH AS POORLY VENTILATED SPACES, EVAPORATION FROM LARGE SURFACES, SPRAYING, HEATING, ETC.
PERSONAL PROTECTIVE EQUIPMENT:	
SKIN PROTECTION	IT IS A GOOD INDUSTRIAL HYGIENE PRACTICE TO MINIMIZE SKIN CONTACT. CHEMICAL IMPERVIOUS GLOVES. WEAR AN APRON AND/OR AN OVERALL.
EYE/FACE PROTECTION.....	WEAR SAFETY GLASSES WITH SIDE SHIELDS (OR GOGGLES) AND A FACE SHIELD.
RESPIRATORY PROTECTION.....	IF ENGINEERING CONTROLS DO NOT MAINTAIN AIRBORNE CONCENTRATIONS TO AN ACCEPTABLE LEVEL, AN APPROVED RESPIRATOR MUST BE WORN. (IN THE USA, IF RESPIRATORS ARE USED, A PROGRAM SHOULD BE INSTITUTED TO ASSURE COMPLIANCE WITH OSHA STANDARD 63 FR 1152, JANUARY 8, 1998.). RESPIRATOR TYPE: ORGANIC VAPOUR.
WORK/HYGIENE PRACTICES	ENSURE THAT EYEWASH STATIONS AND SAFETY SHOWERS ARE PROXIMAL TO THE WORK-STATION LOCATION. USE GOOD PERSONAL HYGIENE PRACTICES. WASH HANDS BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES.

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE.....	LIQUID
APPEARANCE & ODOUR.....	N.AV.
ODOUR THRESHOLD.....	N.AV.
SPECIFIC GRAVITY.....	N.AV.
VAPOUR PRESSURE (MMHG).....	N.AV.
VAPOUR DENSITY (AIR=1).....	N.AV.
EVAPORATION RATE.....	N.AV.
BOILING POINT.....	96^{o}C
FREEZING/MELTING POINT	2^{o}C
PH	8
SOLUBILITY IN WATER (% W/W).....	SOLUBLE.
COEFFICIENT OF WATER/OIL DISTRIBUTION	N.AV.

SECTION 10: STABILITY AND REACTIVITY

STABILITY	STABLE UNDER NORMAL OPERATING CONDITIONS.
CONDITIONS TO AVOID	EXCESSIVE HEAT. CONTACT WITH INCOMPATIBLES.
INCOMPATIBILITY (MATERIALS TO AVOID)	STRONG ACIDS. STRONG BASES. STRONG OXIDIZING AGENTS. MATERIALS REACTIVE WITH HYDROXYL COMPOUNDS.
HAZARDOUS DECOMPOSITION PRODUCT	SEE HAZARDOUS COMBUSTION PRODUCTS.
HAZARDOUS POLYMERIZATION	WILL NOT OCCUR.

SECTION 11: TOXICOLOGICAL INFORMATION

EXPOSURE LIMITS	SEE SECTION 3.
IRRITANCY OF MATERIAL	SEE SECTION 3.
LD50	SEE SECTION 3.
LC50	SEE SECTION 3.
SENSITIZATION TO PRODUCT	ETHYLENE GLYCOL: SKIN CONTACT MAY CAUSE SENSITIZATION AND AN ALLERGIC SKIN REACTION IN A SMALL PROPORTION OF INDIVIDUALS.
CARCINOGENICITY	IARC - NONE OF THE INGREDIENTS ARE LISTED.
REPRODUCTIVE TOXICITY	DIBUTYL PHTHALATE: HIGH ORAL DOSES OF THIS MATERIAL GIVEN TO PREGNANT ANIMALS PRODUCED SOME MINOR ABNORMALITIES IN THEIR OFFSPRING. HOWEVER, HIGH DOSES TO HUMANS HANDLING THIS MATERIAL ARE NOT EXPECTED SINCE ORAL CONSUMPTION IS NOT A LIKELY ROUTE OF SIGNIFICANT EXPOSURE. BECAUSE THIS MATERIAL DOSE NOT EVAPORATE READILY AND IS NOT EASILY ABSORBED THROUGH HUMAN SKIN, IT IS NOT EXPECTED TO PRODUCE SUCH EFFECTS IN HUMANS THROUGH INHALATION OR SKIN EXPOSURE WHEN HANDLED IN A MANNER CONSISTENT WITH THE PRECAUTIONARY MEASURES CONTAINED IN THIS MATERIAL SAFETY DATA SHEET.
TERATOGENICITY	N.AV.
MUTAGENICITY	N.AV.
TOXICOLOGICAL SYNERGISTIC PRODUCTS	N.AV.
CHRONIC TOXICITY	N.AV.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION	N.AV.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS.

SECTION 14: TRANSPORT INFORMATION

PROPER SHIPPING NAME	NOT REGULATED
TDG CLASSIFICATION	N.AP.
UN NUMBER	N.AP.
PACKGING GROUP	N.AP.

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION	D2A. D2B.
CPR COMPLIANCE	THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION	PREPARED BY: REGULATORY AFFAIRS, TELEPHONE - (613)-744-8896 PREPARATION DATE: JULY 1, 2016

N.AV. = NOT AVAILABLE
N.AP. = NOT APPLICABLE