



MURSATT CHEMICALS LIMITED  
11 REGALCREST COURT  
WOODBIDGE, ONTARIO, CANADA; L4L 8P3  
(905)-850-8444

PRODUCT: SHOCK

CODE: MUR0026

## Section 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER..... MURSATT CHEMICALS LIMITED  
11 REGALCREST COURT  
WOODBIDGE, ONTARIO  
CANADA  
L4L 8P3  
PREPARED BY..... REGULATORY AFFAIRS  
PREPARATION DATE..... Jun01/08  
PRODUCT NAME..... SHOCK  
PRODUCT CODE..... MUR0026  
CHEMICAL FORMULA..... MIXTURE.  
MOLECULAR WEIGHT..... MIXTURE.  
CHEMICAL FAMILY..... MIXTURE.  
MATERIAL USE..... STERILANT FOR SWIMMING POOL.  
EMERGENCY PHONE NO..... CANUTEC (613)-996-6666.

## Section 02: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	Exposure Limit	C.A.S.#	LD/50, Route, Species	LC/50 Route, Species
CALCIUM HYPOCHLORITE	60-100	SEE SECTION 11	7778-54-3	SEE SECTION 11	SEE SECTION 11
CALCIUM CHLORATE	1-5	SEE SECTION 11	10137-74-3	SEE SECTION 11	SEE SECTION 11
CALCIUM CARBONATE	1-5	SEE SECTION 11	471-34-1	SEE SECTION 11	SEE SECTION 11
CALCIUM HYDROXIDE	1-5	SEE SECTION 11	1305-62-0	SEE SECTION 11	SEE SECTION 11

## Section 03: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:  
SKIN CONTACT..... CONTACT WITH THE SKIN MAY CAUSE SEVERE IRRITATION, BURNS, OR TISSUE DESTRUCTION. IN STUDIES UTILIZING RABBITS, THE SKIN IRRITATION SCORE WAS 8/8.

SKIN ABSORPTION  
EYE CONTACT..... CALCIUM HYPOCHLORITE IS CORROSIVE TO THE EYES. CONTACT OF CALCIUM HYPOCHLORITE DUST WITH THE EYES, EVEN A MINUTE AMOUNT FOR A SHORT DURATION, CAN CAUSE SEVERE IRRITATION AND EVEN BLINDNESS. IN STUDIES UTILIZING RABBITS, THE EYE IRRITATION SCORE WAS 98.5/110.

INHALATION..... INHALATION OF CALCIUM HYPOCHLORITE DUST AND DEPOSITION OF PARTICLES IN THE RESPIRATORY TRACT CAN LEAD TO IRRITATION OF THE TISSUE AND CAUSE A VARIETY OF EFFECTS. THESE EFFECTS ARE DEPENDENT ON CONCENTRATION AND INCLUDE: UPPER RESPIRATORY TRACT IRRITATION, NASAL CONGESTION, COUGHING, SORE THROAT, LARYNGITIS AND SHORTNESS OF BREATH. IN OPERATIONS WHERE THERE ARE HIGH CONCENTRATIONS OF RESPIRABLE PARTICULATES! PULMONARY EDEMA (FLUID IN THE LUNG) MAY BE PRODUCED. IF NOT TREATED IMMEDIATELY, PULMONARY EDEMA CAN BE LIFE THREATENING. SINCE THIS PRODUCT IS IN GRANULAR OR TABLET FORM, PARTICLES OF RESPIRABLE SIZE ARE NOT GENERALLY ENCOUNTERED.

INGESTION..... CALCIUM HYPOCHLORITE, IF SWALLOWED, CAUSES SEVERE BURNS TO THE DIGESTIVE TRACT AND CAN BE FATAL.

EFFECTS OF ACUTE EXPOSURE..... DANGER! CORROSIVE - CAUSES SEVERE AND IRREVERSIBLE BURNS TO EYE AND SKIN. HARMFUL IF INHALED. MAY CAUSE IRRITATION AND INFLAMMATION TO THE RESPIRATORY TRACT. HARMFUL OR FATAL IF SWALLOWED.

EFFECTS OF CHRONIC EXPOSURE..... GENOTOXICITY: CALCIUM HYPOCHLORITE PRODUCED POSITIVE RESPONSES IN IN-VITRO ASSAYS USING BACTERIAL SYSTEMS (THE AMES TEST) AND CHROMOSOMAL ABERRATIONS IN CHINESE HAMSTER FIBROBLASTS. IN A WHOLE ANIMAL EXPERIMENT (MOUSE MICRONUCLEUS TEST)~ EXPOSURES RANGING FROM 20 TO 160 MG/KG PRODUCED NO COMPOUND RELATED CHROMOSOMAL ABNORMALITIES. CARCINOGENESIS: ALTHOUGH NO STUDY HAS BEEN CONDUCTED WITH CALCIUM HYPOCHLORITE; THE CARCINOGENIC POTENTIAL OF SODIUM HYPOCHLORITE WAS STUDIED IN F344 RATS. AFTER 104 WEEKS OF DRINKING WATER CONTAINING UP TO 2000 PPM SODIUM HYPOCHLORITE; THERE WAS NO EVIDENCE THAT THIS CHEMICAL PRODUCED ANY CARCINOGENIC RESPONSE. IN ADDITION, THIS EXPOSURE DID NOT RESULT IN ANY ADVERSE EFFECTS.

INHALATION, CHRONIC..... N.A.V.

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**Section 04: FIRST AID MEASURES**

EYE CONTACT.....	REMOVE CONTACT LENS AND POUR A GENTLE STREAM OF WARM WATER THROUGH THE AFFECTED EYE FOR AT LEAST 15 MINUTES. CONTACT A POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN RIGHT AWAY AS FURTHER TREATMENT WILL BE NECESSARY.
SKIN CONTACT.....	RUN A GENTLE STREAM OF WATER OVER THE AFFECTED AREA FOR 15 MINUTES. A MILD SOAP MAY BE USED IF AVAILABLE. CONTACT A POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN RIGHT AWAY AS FURTHER TREATMENT WILL BE NECESSARY.
INGESTION.....	GENTLY WIPE OR RINSE THE INSIDE OF THE MOUTH WITH WATER. SIPS OF WATER MAY BE GIVEN IF PERSON IS FULLY CONSCIOUS. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON, DO NOT INDUCE VOMITING. CONTACT A POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN RIGHT AWAY AS FURTHER TREATMENT WILL BE NECESSARY.
INHALATION.....	REMOVE FROM AREA TO FRESH AIR. IF SYMPTOMATIC, CONTACT A POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN FOR TREATMENT INFORMATION.
NOTES TO PHYSICIAN.....	N.AV.

**Section 05: FIRE FIGHTING MEASURES**

T.D.G. FLAM. CLASS.....	NON FLAMMABLE.
FLAMMABILITY.....	NON FLAMMABLE.
IF YES, UNDER WHICH CONDITIONS?	
EXTINGUISHING MEDIA.....	DRENCH WITH LARGE QUANTITIES OF WATER ONLY. DO NOT USE DRY CHEMICALS OR FOAMS. PRODUCT SUPPNEES OWN OXYGEN, THEREFORE ATTEMPTS TO SMOTHER FIRE WITH A WET BLANKET, CARBON DIOXIDE, DRY CHEMICAL EXTINGUISHER OR OTHER MEANS ARE NOT EFFECTIVE.
SPECIAL PROCEDURES.....	PRODUCT DECOMPOSES AT APPROXIMATELY 338 - 356°F (170 - 180 C) RELEASING OXYGEN GAS- CONTAINER MAY RUPTURE. FIRE-FIGHTERS MUST WEAR NIOSH APPROVED, PRESSURE DEMAND, SELF-CONTAINED BREATHING APPARATUS WITH FULL FACE PIECE FOR POSSIBLE EXPOSURE TO HAZARDOUS GASES. EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
FLASH POINT (C), METHOD.....	N.AP.
AUTO IGNITION TEMPERATURE.....	N.AV.
UPPER FLAMMABLE LIMIT (% BY VOL.)....	N.AP.
LOWER FLAMMABLE LIMIT (% BY VOL.)...	N.AP.
EXPLOSION DATA.....	N.AV.
EXPLOSIVE POWER.....	N.AV.
RATE OF BURNING.....	N.AV.
SENSITIVITY TO STATIC DISCHARGE.....	N.AV.
SENSITIVITY TO IMPACT.....	N.AV.
HAZARDOUS COMBUSTION PRODUCTS..	SEE HAZARDOUS DECOMPOSITION PRODUCTS.

**Section 06: ACCIDENTAL RELEASE MEASURES**

LEAK/SPILL.....	USE EXTREME CAUTION IN HANDLING SPILLED MATERIAL. DO NOT MIX WITH ANY OTHER CHEMICALS. CONTAMINATION WITH MOISTURE, ACIDS, ORGANICS OR OTHER EASILY COMBUSTIBLE MATERIALS SUCH AS PETROLEUM, PAINT PRODUCTS, WOOD OR PAPER MAY CAUSE FIRE OR VIOLENT DECOMPOSITION. IF FIRE OR DECOMPOSITION OCCURS IN AREA OF SPILL, IMMEDIATELY DOUSE WITH PLENTY OF WATER. OTHELWISE, SWEEP UP ALL VISIBLE MATERIAL USING A CLEAN (NEW, IF POSSIBLE), DRY SHOVEL AND BROOM AND DISSOLVE MATERIAL IN WATER. SPILLED MATERIAL THAT HAS BEEN SWEPT UP AND DISSOLVED IN WATER SHOULD BE USED IMMEDIATELY IN THE NORMAL APPLICATION FOR WHICH THIS PRODUCT IS BEING CONSUMED. .
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**Section 07: HANDLING AND STORAGE**

HANDLING PROCEDURES AND EQUIPMENT .....	USE ONLY A CLEAN (NEW, IF POSSIBLE), DRY SCOOP MADE OF METAL OR PLASTIC EACH TIME PRODUCT IS TAKEN FROM THE CONTAINER. DO NOT ADD THIS PRODUCT TO ANY DISPENSING DEVICE CONTAINING REMNANTS OF ANY OTHER PRODUCT. SUCH USE MAY CAUSE VIOLENT REACTION LEADING TO FIRE OR EXPLOSION. ADD THIS PRODUCT ONLY TO WATER. NEVER ADD WATER TO PRODUCT ALWAYS ADD THE PRODUCT TO LARGE QUANTITIES OF WATER. MAY CAUSE FIRE AR EXPLOSION IF MIXED WITH OTHER CHEMICALS. FIRE MAY RESULT IF CONTAMINATED WITH ACIDS, ORGANIC MATERIALS AND OTHER EASILY COMBUSTIBLE MATERIALS SUCH AS OIL, KEROSENE, GASOLINE, PAINT PRODUCTS WOOD AND PAPER. DO NOT REUSE CONTAINER. RESIDUAL MATERIAL REMAINING IN EMPTY CONTAINER CAN REACT TO CAUSE FIRE. THOROUGHLY FLUSH EMPTY CONTAINER WITH WATER THEN DESTROY BY PLACING IN TRASH COLLECTION. DO NOT CONTAMINATE WATER, FOOD, OR FEED BY STORAGE OR DISPOSAL OF THIS PRODUCT.
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**Section 07: HANDLING AND STORAGE**

STORAGE NEEDS..... STORE IN A COOL, DRY, WELL-VENTILATED PLACE. KEEP IN ORIGINAL CONTAINER. KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP AWAY FROM HEAT, SPARKS, FLAMES, DIRECT SUNLIGHT, AND OTHER SOURCES OF HEAT, INCLUDING LIGHTED TOBACCO PRODUCTS.

**Section 08: EXPOSURE CONTROLS/PERSONAL PROTECTION**

GLOVES/ TYPE..... BUTYL RUBBER, NEOPRENE, NITRILE.  
 RESPIRATORY/TYPE..... WHERE THE POTENTIAL FOR EXPOSURE TO DUST EXISTS, USE THE APPROPRIATE REGULATORY COMPLIANT FULL FACEPIECE AIR-PURIFYING RESPIRATOR WITH ACID GAS CARTRIDGE AND PARTICULATE PREFILTER. CAREFULLY READ AND FOLLOW THE RESPIRATOR MANUFACTURER'S INSTRUCTIONS AND INFORMATION.  
 EYE/TYPE..... SPLASHPROOF GOGGLES AND FACESHIELD.  
 FOOTWEAR/TYPE..... BOOTS.  
 CLOTHING/TYPE..... APRON. CHEMICAL SUIT.  
 OTHER/TYPE..... N.AV.  
 ENGINEERING CONTROLS..... USE LOCAL EXHAUST OR GENERAL ROOM/DILUTION VENTILATION SUFFICIENT TO MAINTAIN EMPLOYEE EXPOSURE BELOW PERMISSIBLE EXPOSURE LIMITS.

**Section 09: PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE..... WHITE TABLETS.  
 ODOUR..... SLIGHT CHLORINE.  
 ODOUR THRESHOLD..... N.AV.  
 VAPOUR PRESSURE (MMHG).....  
 VAPOUR DENSITY (AIR=1)..... N.AV.  
 BY VOLUME..... N.AV.  
 BY WEIGHT..... N.AV.  
 EVAPORATION RATE..... N.AP.  
 BOILING POINT..... DECOMPOSES AT APPROXIMATELY 338 - 356F (170 - 180C).  
 PH..... ALKALINE.  
 SPECIFIC GRAVITY (WATER=1)..... BULK DENSITY (KG/M3): 67-71 LBS./CU.FT.  
 SOLUBILITY IN WATER (% W/W)..... 217 G/L @ 27°C.  
 COEFFICIENT OF WATER/OIL DIST..... N.AV.

**Section 10: STABILITY AND REACTIVITY**

CHEMICAL STABILITY:  
 YES..... STABLE.  
 NO, WHICH CONDITIONS?..... UNSTABLE ABOVE 338°F (170°C).  
 CONDITIONS TO AVOID..... CONTAMINATION. EXCESSIVE HEAT ABOVE 338°F (170°C).  
 COMPATABILITY WITH OTHER SUBSTANCES:  
 YES  
 NO, WHICH ONES?..... MOISTURE. ACIDS. REDUCING AGENTS. ORGANICS. COMBUSTIBLE MATERIALS. PETROLEUM PRODUCTS. PAINT PRODUCTS. WOOD AND PAPER.  
 REACTIVITY CONDITIONS:..... CONTACT WITH INCOMPATIBLES.  
 HAZARDOUS PRODUCTS OF DECOMPOSITION..... ACID OR AMMONIA CONTAMINATION WILL RELEASE TOXIC GASES. EXCESSIVE HEAT WILL CAUSE DECOMPOSITION RESULTING IN THE RELEASE OF OXYGEN AND CHLORINE GAS.  
 HAZARDOUS POLYMERIZATION..... WILL NOT OCCUR.

**Section 11: TOXICOLOGICAL INFORMATION**

EXPOSURE LIMIT OF MATERIAL..... 8-HOUR TIME WEIGHTED AVERAGE (TWA); 15-MINUTE SHORT-TERM EXPOSURE LIMIT (STEL). OSHA: THE OSHA EXPOSURE LIMIT(S) FOR CHLORINE: 0.5 PPM TWA. 1 PPM STEL. CALCIUM HYDROXIDE: 5 MG/M3 TWA. CALCIUM CARBONATE: 15 MG/M3 (TOTAL DUST) 5 MG/M3 (RESPIRABLE DUST) (1989 VACATED PEL'S). ACGIH: THE ACGIH EXPOSURE LIMIT(S) FOR CHLORINE: 0.5 PPM TWA. 1 PPM STEL. CALCIUM HYDROXIDE: 5 MG/M3 TWA. CALCIUM CARBONATE: 10 MG/M3 (TOTAL DUST) 3 MG/M3 (RESPIRABLE NUISANCE PARTICULATE) TWA. ONTARIO: THE ONTARIO EXPOSURE LIMIT(S) FOR CHLORINE: 0.5 PPM TWA EV 1 PPM STEV (SHORT TERM EXPOSURE VALUE) CALCIUM HYDROXIDE: 5 MG/M3 CALCIUM CARBONATE: 10 MG/M3 TWA EV.  
 LC 50 OF MATERIAL, SPECIES & ROUTE.. NO MORTALITY AT 3.5 MG/L (RAT) (1 HOUR) SLIGHT TO VERY LOW TOXICITY.  
 LD 50 OF MATERIAL, SPECIES & ROUTE.. >1000 MG/KG. (DERMAL - RABBIT) SLIGHT TO VERY LOW TOXICITY. 850 MG/KG. (ORAL - RAT) MODERATE TOXICITY.  
 CARCINOGENICITY OF MATERIAL..... THIS PRODUCT IS NOT LISTED AS A CARCINOGEN OR SUSPECTED CARCINOGEN BY NTP, IARC, ACGIH I OR OSHA.  
 REPRODUCTIVE EFFECTS..... N.AV.  
 IRRITANCY OF MATERIAL..... CORROSIVE.  
 SENSITIZING CAPABILITY OF MATERIAL..... N.AV.

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**Section 11: TOXICOLOGICAL INFORMATION**

SYNERGISTIC MATERIALS..... N.AV.  
 MUTAGENICITY..... N.AV.  
 TERATOGENICITY..... N.AV.

**Section 12: ECOLOGICAL CONSIDERATIONS**

ECOLOGICAL INFORMATION..... 0.088 MG/L (BLUEGILL) 96-HOUR LC50. EXTREME TOXICITY.

**Section 13: DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL..... DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. SPILLED MATERIAL THAT HAS BEEN SWEEPED UP AND DISSOLVED IN WATER SHOULD BE USED IMMEDIATELY IN THE NORMAL APPLICATION FOR WHICH THIS PRODUCT IS BEING USED. IF THIS IS NOT POSSIBLE, DISSOLVE MATERIAL IN WATER AND CAREFULLY NEUTRALIZE DISSOLVED MATERIAL BY ADDING HYDROGEN PEROXIDE (ONE PINT OF 35% HYDROGEN PEROXIDE SOLUTION PER POUND OF CALCIUM HYPOCHLORITE TO BE NEUTRALIZED) THEN DILUTE THE NEUTRALIZED MATERIAL WITH PLENTY OF WATER AND FLUSH TO SEWER. NOTE: ONLY PROPERLY NEUTRALIZED MATERIAL SHOULD BE FLUSHED TO SEWER. UNNEUTRALIZED MATERIAL CAN CAUSE ENVIRONMENTAL DAMAGE TO RECEIVING WATER OR CAN INTERFERE WITH TREATMENT PLANT OPERATION. CARE MUST BE TAKEN WHEN USING OR DISPOSING OF CHEMICAL MATERIALS AND/OR THEIR CONTAINERS TO PREVENT ENVIRONMENTAL CONTAMINATION, IT IS YOUR DUTY TO DISPOSE OF THE CHEMICAL MATERIALS AND/OR THEIR CONTAINERS IN ACCORDANCE WITH THE U.S. CLEAN AIR ACT, THE CLEAN WATER ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AS WELL AS ANY OTHER RELEVANT FEDERAL, STATE, OR LOCAL LAWS/REGULATIONS REGARDING DISPOSAL.

**Section 14: TRANSPORT INFORMATION**

TDG CLASSIFICATION..... 5.1.  
 PROPER SHIPPING NAME..... CALCIUM HYPOCHLORITE, HYDRATED.  
 UN NUMBER..... 2880.  
 PACKING GROUP..... II.  
 SPECIAL SHIPPING INSTRUCTIONS..... OXIDIZER.

**Section 15: REGULATORY INFORMATION**

CPR COMPLIANCE..... THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.  
 WHMIS CLASSIFICATION..... C. E.

**Section 16: OTHER INFORMATION**

N.AP.=NOT APPLICABLE  
 N.AV.=NOT AVAILABLE  
 OTHER INFORMATION..... THE DATA IN THIS MSDS RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS. THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS PRODUCT SPECIFICATIONS. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.