



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

PRODUCT: NU-BLU

CODE: MUR0041

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..... May26/11
PRODUCT NAME..... NU-BLU
PRODUCT CODE..... MUR0041
CHEMICAL FORMULA..... AL13(OH)20(SO4)2CL15.
MOLECULAR WEIGHT..... N.AV.
CHEMICAL FAMILY..... N.AV.
MATERIAL USE..... COAGULANT FOR THE TREATMENT OF SWIMMING POOLS AND SPA WATERS.
EMERGENCY PHONE NO..... CANUTEC (613)-996-6666.

Section 02: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:
SKIN CONTACT..... SEE BELOW.
SKIN ABSORPTION..... N.AV.
EYE CONTACT..... SEE BELOW.
INHALATION..... SEE BELOW.
INGESTION..... SEE BELOW.
EFFECTS OF ACUTE EXPOSURE..... IRRITATING TO EYES, SKIN, RESPIRATORY AND DIGESTIVE TRACTS. INHALATION
OVEREXPOSURE TO THE MIST OR VAPOR MAY CAUSE RESPIRATORY TRACT
IRRITATION. REFER TO SECTION 11 FOR TOXICOLOGY INFORMATION ON THE
REGULATED COMPONENTS OF THIS PRODUCT. DIRECT CONTACT WITH THIS
MATERIAL MAY CAUSE MODERATESEVERE EYE AND SKIN IRRITATION.
EFFECTS OF CHRONIC EXPOSURE..... N.AV.

Section 03: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	Exposure Limit	C.A.S.#	LD/50, Route, Species	LC/50 Route, Species
ALUMINUM CHLORIDE HYDROXIDE SULFATE	30-33	SEE SECTION 11	39290-78-3	SEE SECTION 11	SEE SECTION 11

Section 04: FIRST AID MEASURES

GENERAL:..... IF YOU FEEL UNWELL, SEEK MEDICAL ATTENTION (SHOW THE LABEL OR THIS
MSDS IF POSSIBLE). ENSURE THAT MEDICAL PERSONNEL ARE AWARE OF THE
MATERIAL(S) INVOLVED.
EYE CONTACT..... IN CASE OF EYE CONTACT, IMMEDIATELY IRRIGATE WITH PLENTY OF WATER FOR
15 MINUTES. OBTAIN MEDICAL ATTENTION WITHOUT DELAY FOR ANY SYMPTOMS
OF INJURY TO THE EYE.
SKIN CONTACT..... DO NOT REUSE CONTAMINATED CLOTHING WITHOUT LAUNDERING. WASH
IMMEDIATELY WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING AND
SHOES WITHOUT DELAY. GET MEDICAL ATTENTION IF PAIN OR IRRITATION
PERSISTS AFTER WASHING OR IF SIGNS AND SYMPTOMS OF OVEREXPOSURE
APPEAR.
INHALATION..... REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, GIVE OXYGEN. APPLY
ARTIFICIAL RESPIRATION IF PATIENT IS NOT BREATHING. OBTAIN MEDICAL
ATTENTION IMMEDIATELY.
INGESTION..... IF SWALLOWED, CALL A PHYSICIAN IMMEDIATELY. ONLY INDUCE VOMITING AT
THE INSTRUCTION OF A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO AN
UNCONSCIOUS PERSON. GIVE ONE OR TWO GLASSES OF WATER TO DRINK AND
REFER TO MEDICAL PERSONNEL OR TAKE DIRECTION FROM EITHER A
PHYSICIAN OR A POISON CONTROL CENTER.
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..... THE SUBSTANCE IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA
APPROPRIATE TO THE SURROUNDING FIRE.

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Section 05: FIRE FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURES... WEAR FULL FIREFIGHTING PROTECTIVE CLOTHING. SEE MSDS SECTION 8 (EXPOSURE CONTROLS/PERSONAL PROTECTION). FIREFIGHTERS, AND OTHERS EXPOSED, WEAR SELF-CONTAINED BREATHING APPARATUS.

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..... DOES NOT BURN.
 SENSITIVITY TO STATIC DISCHARGE..... NONE.
 SENSITIVITY TO IMPACT..... NONE.
 HAZARDOUS COMBUSTION PRODUCTS... DECOMPOSITION RELEASES MAY INCLUDE HYDROGEN CHLORIDES, ALUMINUM OXIDES, AND OXIDES OF SULFUR. DURING A FIRE, IRRITATING/TOXIC AND CORROSIVE FUMES MAY EVOLVE.

Section 06: ACCIDENTAL RELEASE MEASURES

LEAK/SPILL..... RESTRICT ACCESS UNTIL CLEAN-UP OPERATIONS ARE COMPLETE. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT PER SECTION 8. ENSURE TRAINED PERSONNEL CONDUCT CLEAN UP AND WEAR PERSONAL PROTECTIVE EQUIPMENT PER SECTION 8. STOP LEAK IF POSSIBLE. AVOID PERSONAL RISK. SMALL SPILLS - ABSORB SPILL WITH CLAY OR DRY MATERIAL OR NEUTRALIZE WITH LIME, LIMESTONE OR SODA ASH AND COLLECT IN APPROPRIATE CONTAINER FOR DISPOSAL. NEUTRALIZATION WITH SODA ASH CAN GENERATE CARBON DIOXIDE SO ADDITIONAL VENTILATION MAY BE NECESSARY. LARGE SPILLS - PREVENT ENTRY INTO SEWERS AND CONFINED AREAS. DIKE, IF POSSIBLE. KEEP UNNECESSARY PEOPLE AWAY, ISOLATE AREA AND DENY ENTRY. PUMP LIQUID MATERIAL INTO APPROPRIATE VESSELS AS POSSIBLE OR ABSORB SPILL WITH CLAY ABSORBENTS OR NON-REACTIVE DRY MATERIALS AND COLLECT IN APPROPRIATE CONTAINER FOR DISPOSAL. NEUTRALIZE SPILL RESIDUALS CAREFULLY WITH LIME, LIMESTONE, OR SODA ASH AND COLLECT IN SUITABLE CONTAINER FOR DISPOSAL. FLUSH AREA WITH WATER. THIS COULD GENERATE CARBON DIOXIDE SO ADDITIONAL VENTILATION MAY BE NECESSARY.

Section 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND AVOID CONTACT WITH EYES, SKIN AND CLOTHING. WASH THOROUGHLY AFTER EQUIPMENT HANDLING. REVIEW THE LABEL, THIS MSDS AND ANY OTHER APPLICABLE INFORMATION BEFORE USE. KEEP SEPARATED FROM INCOMPATIBLE SUBSTANCES. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT PER SECTION 8. HANDLE ONLY WITH EQUIPMENT, MATERIALS AND SUPPLIES SPECIFIED BY THEIR MANUFACTURER AS BEING COMPATIBLE AND APPROPRIATE FOR USE WITH THIS PRODUCT.

STORAGE NEEDS..... MATERIAL MAY BE STORED IN TIGHTLY CLOSED SHIPPING CONTAINERS, PREFERABLY THE SUPPLIER'S CONTAINERS. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY, SINCE THEY RETAIN PRODUCT RESIDUES (VAPORS, LIQUID); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT. DO NOT USE METAL CONTAINERS. STORE IN DRY RUBBER LINED, PLASTIC, OR FRP VESSELS. STORE AT 10 - 30 °C.

Section 08: EXPOSURE CONTROLS AND PERSONAL PROTECTION

GLOVES/ TYPE..... WEAR IMPERVIOUS GLOVES.
 RESPIRATORY/TYPE..... WHERE EXPOSURES ARE BELOW THE ESTABLISHED EXPOSURE LIMIT, NO RESPIRATORY PROTECTION IS REQUIRED. WHERE EXPOSURES EXCEED THE ESTABLISHED EXPOSURE LIMIT, USE RESPIRATORY PROTECTION RECOMMENDED FOR THE MATERIAL AND LEVEL OF EXPOSURE.

EYE/TYPE..... WEAR EYE/FACE PROTECTION SUCH AS CHEMICAL SPLASH PROOF GOGGLES OR FACE SHIELD.

FOOTWEAR/TYPE..... PROTECTIVE FOOTWEAR.
 CLOTHING/TYPE..... WEAR SUITABLE PROTECTIVE CLOTHING.

OTHER/TYPE..... MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.
 ENGINEERING CONTROLS..... WHERE THIS MATERIAL IS NOT USED IN A CLOSED SYSTEM, GOOD ENCLOSURE AND LOCAL EXHAUST VENTILATION SHOULD BE PROVIDED TO CONTROL EXPOSURE.

ADDITIONAL INFORMATION..... BEFORE EATING, DRINKING, OR SMOKING, WASH FACE AND HANDS THOROUGHLY WITH SOAP AND WATER. FOOD, BEVERAGES, AND TOBACCO PRODUCTS SHOULD NOT BE CARRIED, STORED, OR CONSUMED WHERE THIS MATERIAL IS IN USE.

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Section 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE..... CLEAR BLUE LIQUID.
 ODOUR..... SLIGHT.
 ODOUR THRESHOLD..... N.AV.
 VAPOUR PRESSURE (MMHG)..... 17 MM HG @ 20 °C.
 VAPOUR DENSITY (AIR=1)..... 1.3.
 BY VOLUME
 BY WEIGHT
 EVAPORATION RATE..... N.AV.
 BOILING POINT..... ~102 °C.
 MELTING POINT (C)..... -12.
 PH..... 2.1 - 3.1.
 SPECIFIC GRAVITY (WATER=1)..... 1.18 - 1.28.
 SOLUBILITY IN WATER (% W/W)..... COMPLETE.
 COEFFICIENT OF WATER/OIL DIST..... N.AV.

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY..... STABLE.
 CONDITIONS TO AVOID..... AVOID CONTACT WITH MINERAL ACIDS, EXCESSIVE HEAT AND BASES/ALKALIS.
 MATERIALS TO AVOID..... METALS SUCH AS IRON OR STEEL WHICH ARE SUBJECT TO CORROSION.
 CARBON STEEL, ALUMINUM, CARBON, BRASSES, AND NYLON.
 HAZARDOUS PRODUCTS OF DECOMPOSITION..... THERMAL DECOMPOSITION: AFTER COMPLETELY DRY AND HEATED TO
 DECOMPOSITION WILL PRODUCE SULFUR OXIDES AND ALUMINUM OXIDES AS
 WELL AS HCL GAS.
 HAZARDOUS POLYMERIZATION..... WILL NOT OCCUR.

Section 11: TOXICOLOGICAL INFORMATION

EXPOSURE LIMIT OF MATERIAL..... NOT ESTABLISHED.
 LC 50 OF MATERIAL, SPECIES & ROUTE.. N.AV.
 LD 50 OF MATERIAL, SPECIES & ROUTE.. ALUMINIM CHLORIDE HYDROXIDE SULFATE HAS AN ACUTE ORAL (RAT) LD50 OF
 >5000 MG/KG.
 CARCINOGENICITY OF MATERIAL..... ALUMINUM CHLORIDE HYDROXIDE SULFATE. IARC: NOT LISTED.
 REPRODUCTIVE EFFECTS..... N.AV.
 IRRITANCY OF MATERIAL..... DIRECT CONTACT WITH EYES OR SKIN MAY CAUSE MODERATE IRRITATION OF
 THE EYES AND SKIN.
 SENSITIZING CAPABILITY OF MATERIAL. N.AV.
 SYNERGISTIC MATERIALS..... N.AV.
 MUTAGENICITY..... N.AV.
 TERATOGENICITY..... N.AV.

Section 12: ECOLOGICAL CONSIDERATIONS

ECOLOGICAL INFORMATION..... FISH TEST RESULTS - DURATION 96 HR. FATHEAD MINNOW (PIMEPHALES
 PROMELAS): 1074 PPM (LC50); 20 PPM (NOEC). DURATION 96 HR. RAINBOW TROUT
 (ONCORHYNCUS MYKISS): 1768 PPM (LC50). DURATION 48 HR. PROCEDURE:
 STATIC. GOLDEN ORF (LEUCISCUS IDUS MELANOTOUS): 1460 - 1500 MG/L (LC50).
 INVERTEBRATE TES RESULTS - DURATION 48 HR. WATER FLEA (DAPHNIA
 MAGNA): 1698 PPM (LC50); DURATION 48 HR. WATER FLEA (CERIODAPHNIA
 DUBIA): 1106 PPM (LC50); 625 PPM (NOEC); 1250 PPM (LOEC).

Section 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL..... DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

Section 14: TRANSPORT INFORMATION

TDG CLASSIFICATION..... 8.
 UN NUMBER..... 3264.
 PACKING GROUP..... III.
 PROPER SHIPPING NAME..... CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ALUMINUM CHLORIDE
 HYDROXIDE SULFATE).
 SPECIAL SHIPPING INSTRUCTIONS..... CORROSIVE MATERIAL.

Section 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION..... E.
 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.

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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.