SECTION 01: IDENTIFICATION

PRODUCT IDENTIFIER................................ MALEIC ANHYDRIDE
OTHER MEANS OF IDENTIFICATION........ CIS-BUTENEDIOIC ANHYDRIDE.
RECOMMENDED USE AND ....................... CHEMICAL SYNTHESIS, INTERMEDIATE.
RESTRICTIONS ON USE SUPPLIER IDENTIFIER................................ BARTEK INGREDIENTS INC.
SUPPLIER IDENTIFIER................................ BARTEK INGREDIENTS INC.
421 SEAMAN STREET
STONEY CREEK
ONTARIO
CANADA
L8E 3J4
905-662-3292
EMERGENCY PHONE NO........................... CANUTEC (613)-996-6666 (24 HR).

SECTION 02: HAZARD IDENTIFICATION

HAZARD CLASSIFICATION......................... ACUTE TOXICITY (ORAL) - CATEGORY 4. SKIN CORROSION - CATEGORY 1B.
SERIOUS EYE DAMAGE - CATEGORY 1. RESPIRATORY SENSITIZATION - CATEGORY 1. SKIN SENSITIZATION - CATEGORY 1.
ACUTE AQUATIC TOXICITY - CATEGORY 3.

SIGNAL WORD............................................. DANGER.

HAZARD STATEMENT................................. H302 HARMFUL IF SWALLOWED. H314 CAUSES SEVERE SKIN BURNS AND EYE
DAMAGE. H317 MAY CAUSE AN ALLERGIC SKIN REACTION. H318 CAUSES
SERIOUS EYE DAMAGE. H334 MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR
BREATHING DIFFICULTIES IF INHALED. H402 HARMFUL TO AQUATIC LIFE.

PRECAUTIONARY STATEMENT................. P260 DO NOT BREATHE DUST/FUME/GAS/MIST/VAPOURS/SPRAY. P264 WASH SKIN
THOROUGHLY AFTER HANDLING. P270 DO NOT EAT, DRINK OR SMOKE WHEN
USING THIS PRODUCT. P272 CONTAMINATED WORK CLOTHING SHOULD NOT BE
ALLOWED OUT OF THE WORKPLACE. P273 AVOID RELEASE TO THE
ENVIRONMENT. P280 WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE
PROTECTION/FACE PROTECTION. P285 IN CASE OF INADEQUATE VENTILATION
WEAR RESPIRATORY PROTECTION. P301+P312+P330 IF SWALLOWED: CALL A
POISON CENTER OR DOCTOR/PHYSICIAN IF YOU FEEL UNWELL. RINSE MOUTH.
P331 IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ATTENTION. P342+P311 IF EXPERIENCING RESPIRATORY
SYMPTOMS: CALL A POISON CENTER OR DOCTOR/PHYSICIAN. P363 WASH
CONTAMINATED CLOTHING BEFORE REUSE. P405 STORE LOCKED UP. P501
DISPOSE OF CONTENTS/CONTAINER TO APPROPRIATE WASTE SITE OR
RECLAIMER IN ACCORDANCE WITH LOCAL AND NATIONAL REGULATIONS.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS:

SECTION 03: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>CAS #</th>
<th>WT. %</th>
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<tbody>
<tr>
<td>MALEIC ANHYDRIDE</td>
<td>108-31-6</td>
<td>&gt;99.5</td>
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</table>
PRODUCT: MALEIC ANHYDRIDE

SECTION 04: FIRST AID MEASURES

INHALATION.............................................. ALLOW THE VICTIM TO REST IN A WELL VENTILATED AREA. SEEK IMMEDIATE MEDICAL ATTENTION.

EYE CONTACT.......................................... IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES, KEEPING EYELIDS OPEN. SEEK MEDICAL ATTENTION.

SKIN CONTACT......................................... AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION. WASH CONTAMINATED CLOTHING BEFORE REUSING.

INGESTION................................................ DO NOT INDUCE VOMITING. HAVE A CONSCIOUS PERSON DRINK SEVERAL GLASSES OF WATER OR MILK. SEEK IMMEDIATE MEDICAL ATTENTION.

MOST IMPORTANT SYMPTOMS AND EFFECTS, ACUTE OR DELAYED: SEE SECTION 11.

SECTION 05: FIRE FIGHTING MEASURES

FLAMMABILITY............................................ NOT COMBUSTIBLE/NOT FLAMMABLE.

EXTINGUISHING MEDIA.............................. SMALL FIRE: CARBON DIOXIDE, WATER, FOAM. LARGE FIRE: WATER SPRAY, FOG OR FOAM. DO NOT USE WATER JET. DO NOT USE DRY CHEMICAL: LARGE VOLUMES OF GASES COULD BE-produced BY REACTION WITH MALEIC ANHYDRIDE.

HAZARDOUS COMBUSTION PRODUCTS. SPECIAL HAZARDS ARISING FROM THE PRODUCT: CARBON DIOXIDE, CARBON MONOXIDE.

UNSTABLE, OR AIR-REACTIVE OR WATER-REACTIVE CHEMICAL INVOLVED (SEE SECTION 10). VAPORS FROM MELTED MATERIAL CAN BE IGNITED. KEEP MELTED MATERIAL AWAY FROM IGNITION SOURCES. MAY FORM FLAMMABLE DUST-AIR MIXTURES WHEN FINELY DIVIDED. PREVENT DUST BUILDUP BY PROVIDING ADEQUATE VENTILATION DURING GRINDING OR MILLING OPERATIONS.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS: WEAR SELF-CONTAINED BREATHING APPARATUS WITH FULL FACE PIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

SECTION 06: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS........................ AVOID BREATHING DUST. PRESSURE DEMAND AIR SUPPLIED RESPIRATORS SHOULD ALWAYS BE WORN WHEN THE AIRBORNE CONCENTRATION OF THE CONTAMINANT OR OXYGEN IS UNKNOWN. OTHERWISE, WEAR RESPIRATORY PROTECTION AND OTHER PERSONAL PROTECTIVE EQUIPMENT AS APPROPRIATE FOR THE POTENTIAL EXPOSURE HAZARD. WEAR GLOVES, GOGGLES, AND PROTECTIVE CLOTHING TO AVOID CONTACT WITH EYES, SKIN, OR CLOTHING.

ENVIRONMENTAL PRECAUTIONS............ PREVENT ENTRY INTO SEWERS AND WATERWAYS.

METHODS FOR CONTAINMENT.................. CONTAIN THE DISCHARGED MATERIAL.

METHODS FOR CLEANING UP.................. USE APPROPRIATE TOOLS TO PUT THE SPILLED SOLID IN A WASTE DISPOSAL CONTAINER. IF NECESSARY, NEUTRALIZE THE RESIDUE WITH A DILUTE SOLUTION OF SODIUM HYDROXIDE. DO NOT DRY SWEEP OR USE METHODS THAT INCREASE DUSTING.

SECTION 07: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:..... MINIMUM FEASIBLE HANDLING TEMPERATURES SHOULD BE MAINTAINED. AVOID GENERATING MIST OR DUST. EXERCISE CARE WHEN OPENING BLEEDERS AND SAMPLING PORTS. DO NOT BREATHE GAS, FUMES, VAPOR OR SPRAY. DO NOT INGEST. AVOID CONTACT WITH SKIN AND EYES. AFTER HANDLING, ALWAYS WASH HANDS THOROUGHLY WITH SOAP AND WATER.

CONDITIONS FOR SAFE STORAGE,..... STORE AWAY FROM INCOMPATIBLE MATERIALS. STORE AT TEMPERATURES NOT EXCEEDING 70°C (158°F). CONTAINS MOISTURE SENSITIVE MATERIAL - STORE IN A DRY PLACE.

SECTION 08: EXPOSURE CONTROLS AND PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>TWA</th>
<th>ACGIH TLV</th>
<th>STEL</th>
<th>OSHA PEL</th>
<th>STEL</th>
<th>REL</th>
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<tbody>
<tr>
<td>MALEIC ANHYDRIDE</td>
<td>0.1 PPM</td>
<td>N.AV.</td>
<td>TWA: 0.25 PPM 8H; N.AV.</td>
<td>N.AV.</td>
<td>N.AV.</td>
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</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROLS ADEQUATE TO MEET OCCUPATIONAL EXPOSURE LIMITS.

INDIVIDUAL PROTECTION MEASURE SUCH AS PERSONAL PROTECTIVE EQUIPMENTS:

EYE PROTECTION.................................. CHEMICAL TYPE GOGGLES WITH FACE SHIELD MUST BE WORN. DO NOT WEAR CONTACT LENSES.
PRODUCT: MALEIC ANHYDRIDE

SECTION 08: EXPOSURE CONTROLS AND PERSONAL PROTECTION

HAND PROTECTION........................................ GLOVES RESISTANT TO CHEMICALS AND PETROLEUM DISTILLATES REQUIRED.
RESPIRATORY PROTECTION............................... IF DUST IS GENERATED AND THE OCCUPATIONAL EXPOSURE LIMIT OF THE PRODUCT IS EXCEEDED, USE APPROPRIATE NIOSH OR MSHA APPROVED AIR PURIFYING OR AIR SUPPLIED RESPIRATOR AFTER DETERMINING THE AIRBORNE CONCENTRATION OF THE CONTAMINANT. AIR SUPPLIED RESPIRATORS SHOULD ALWAYS BE WORN WHEN AIRBORNE CONCENTRATION OF THE CONTAMINANT OR OXYGEN CONTENT IS UNKNOWN.
PROTECTIVE CLOTHING............................... PROTECTIVE CLOTHING SUCH AS COVERALLS OR LAB COATS MUST BE WORN. WHEN HANDLING LARGE QUANTITIES, IMPERVIOUS SUITS, GLOVES, AND RUBBER BOOTS MUST BE WORN. REMOVE AND DRY-CLEAN OR LAUNDER CLOTHING SOAKED OR SPOILED WITH THIS MATERIAL BEFORE REUSE. DRY CLEANING OF CONTAMINATED CLOTHING MAY BE MORE EFFECTIVE THAN NORMAL LAUNDERING. INFORM INDIVIDUALS RESPONSIBLE FOR CLEANING OF POTENTIAL HAZARDS ASSOCIATED WITH HANDLING CONTAMINATED CLOTHING.
PROTECTIVE FOOTWEAR............................... SEE ABOVE.
OTHER....................................................... EYE WASH AND SAFETY SHOWER SHOULD BE AVAILABLE NEARBY WHEN THIS PRODUCT IS HANDLED OR USED. WASH HANDS BEFORE CONSUMPTION OF FOOD OR DRINK.

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE........................................ MOLTEN LIQUID.
ODOUR....................................................... STRONG IRRITATING ACRID ODOUR.
ODOUR THRESHOLD.................................. 0.5 PPM.
COLOR.......................................................... WATER-WHITE.
PH................................................................. 2.42 (0.1 M SOLUTION).
BOILING POINT............................................ 202°C (395°F).
MELTING/FREEZING POINT....................... 52.5°C (126.5°F).
FLASH POINT (C), METHOD....................... 102°C (215°F) (PMCC).
EVAPORATION RATE................................. N.A.P.
FLAMMABILITY (SOLIDS AND GASES)............ N.AV.
UPPER FLAMMABLE LIMIT (% BY VOL)............ 7.1.
LOWER FLAMMABLE LIMIT (% BY VOL)......... 1.4.
VAPOUR PRESSURE (MMHG)....................... 0.2 MM HG AT 25°C.
VAPOUR DENSITY (AIR=1)......................... 3.38.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY................................................. WILL NOT SELF-POLYMERIZE BUT CAN UNDERGO UNCONTROLLED CO-POLYMERIZATION IN THE PRESENCE OF OTHER MONOMERS AND CATALYSTS (SEE INCOMPATIBLE MATERIALS).
CHEMICAL STABILITY:................................. STABLE EXCEPT WHEN IN CONTACT WITH WATER.
POSSIBILITY OF HAZARDOUS REACTIONS:........... UNDER NORMAL CONDITIONS OF STORAGE AND USE, HAZARDOUS REACTIONS WILL NOT OCCUR.
CONDITION TO AVOID:............................... CONTACT WITH INCOMPATIBLES, MOISTURE.
INCOMPATIBLE MATERIALS:............................. MAY REACT VIOLENTLY WITH AMINES, ALKALI METAL IONS SUCH AS SODIUM OR POTASSIUM, AND BASES. AT TEMPERATURES ABOVE 150°C, THESE MATERIALS, AT CONCENTRATIONS AS LOW AS 200 PPM., CAN TRIGGER A RAPID DECOMPOSITION AND POLYMERIZATION REACTION THAT WOULD PRODUCE HEAT AND GAS AND CAUSE EQUIPMENT TO RUPTURE.
HAZARDOUS PRODUCTS OF DECOMPOSITION:............ TOXIC LEVELS OF CARBON MONOXIDE, CARBON DIOXIDE, IRRITATING ALDEHYDES AND KETONES MAY BE FORMED ON BURNING. HEATING IN AIR MAY PRODUCE IRRITATING ALDEHYDES, ACIDS, AND KETONES.

SECTION 11: TOXICOLOGICAL INFORMATION

INGREDIENTS LC50 LD50

MALEIC ANHYDRIDE SEE BELOW LD50 (ORAL, RAT): 1030 MG/KG; LD50 (DERMAL, RABBIT): 2620 MG/KG.

INFORMATION ON LIKELY ROUTES OF ENTRY:
PRODUCT: MALEIC ANHYDRIDE

SECTION 11: TOXICOLOGICAL INFORMATION

SKIN CONTACT......................................... CAUSES SKIN BURNS. HARMFUL IF ABSORBED THROUGH SKIN.
EYE CONTACT.......................................... CAUSES EYE BURNS.
INHALATION.............................................. CAUSES RESPIRATORY TRACT IRRITATION AND CAN CAUSE DAMAGE.
INGESTION................................................ HARMFUL OR FATAL IF SWALLOWED.

INFORMATION ON TOXICOLOGICAL EFFECTS:

EFFECTS OF ACUTE EXPOSURE................. CORROSIVE. MOLLEN PRODUCT CAN CAUSE THERMAL BURNS. EXTREMELY DANGEROUS IN CASE OF SKIN CONTACT (CORROSIVE, IRRITANT), OF EYE CONTACT (IRRITANT) AND INHALATION. VERY DANGEROUS IN CASE OF INGESTION. SLIGHTLY DANGEROUS IN CASE OF SKIN CONTACT (SENSITIZER), EYE CONTACT CAN RESULT IN CORNEAL DAMAGE OR BLINDNESS. INHALATION OF DUST WILL PRODUCE IRRITATION TO GASTRO-INTESTINAL OR RESPIRATORY TRACT, CHARACTERIZED BY BURNING, SNEEZING AND COUGHING.

EFFECTS OF CHRONIC EXPOSURE........... MAY CAUSE ALLERGIC SKIN AND RESPIRATORY (ASTHMA LIKE) REACTION. REPEATED EXPOSURE OF THE EYES TO LOW LEVEL DUST CAN PRODUCE IRRITATION. REPEATED SKIN EXPOSURE CAN CAUSE LOCAL SKIN DESTRUCTION OR DERMATITIS. REPEATED INHALATION CAN CAUSE A VARYING DEGREE OF RESPIRATORY IRRITATION OR LUNG DAMAGE. REPEATED EXPOSURE TO A HIGHLY TOXIC MATERIAL MAY PRODUCE GENERAL DETERIORATION OF HEALTH BY ACCUMULATION IN ONE OR MANY HUMAN ORGANS.

INHALATION, CHRONIC........................... N.AV.
CARCINOGENICITY OF MATERIAL.............. N.AV.
REPRODUCTIVE EFFECTS...................... N.AV.
SENSITIZING CAPABILITY OF MATERIAL....... THE LIMITED NUMBER OF ANIMAL STUDIES INVESTIGATING THE DERMAL OR RESPIRATORY SENSITIZATION POTENTIAL OF MALEIC ANHYDRIDE HAVE NOT SHOWN CONCLUSIVE EVIDENCE OF SENSITIZATION POTENTIAL. ALTHOUGH THER HAVE BEEN REPORTS OF HUMAN DERMAL OR RESPIRATORY SENSITIZATION FROM MALEIC ANHYDRIDE EXPOSURES, THE NUMBER OF REPORTS HAS BEEN LOW WHEN COMPARED TO THE NUMBER OF POTENTIALLY EXPOSED INDIVIDUALS. MALEIC ANHYDRIDE HAS A LOW POTENTIAL FOR HUMAN DERMAL OR RESPIRATORY SENSITIZATION.
SYNERGISTIC MATERIALS...................... N.AV.
REFERENCE: FAATDF FUNDAMENTAL AND APPLIED TOXICOLOGY. (ACADEMIC PRESS, INC.; 1 E. FIRST ST., DULUTH, MN 55802)

SECTION 12: ECOLOGICAL CONSIDERATIONS

BIOACCUMULATIVE POTENTIAL.............. THIS PRODUCT IS NOT EXPECTED TO BIOACCUMULATE THROUGH FOOD CHAINS IN THE ENVIRONMENT.
AQUATIC TOXICITY................................. LC50 - 96HR 230 MG/LITER (MOSQUITO FISH) PRACTICALLY NONTOXIC. LC50 - 24HR 150 MG/LITER (BLUE GILL SUNFISH) PRACTICALLY NONTOXIC. THIS PRODUCT WILL HYDROLYZE RAPIDLY TO THE ACID. EXPECTED TO BE SLIGHTLY TOXIC TO AQUATIC SPECIES BECAUSE OF ACIDITY.
MOBILITY...................................................... THIS PRODUCT IS NOT LIKELY TO VOLATILIZE RAPIDLY INTO THE AIR BECAUSE OF ITS LOW VAPOUR PRESSURE.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS:.............. DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION 14: TRANSPORT INFORMATION

CANADA:
TDG CLASSIFICATION:......................... 8.
USA:
D.O.T. CLASSIFICATION:...................... 8.
PROPER SHIPPING NAME:..................... MALEIC ANHYDRIDE.
UN NUMBER:........................................... 2215.
PACKING GROUP........................................ III.
ENVIRONMENTAL HAZARDS ACCORDING TO THE INTERNATIONAL MARITIME DANGEROUS GOODS CODE AND THE UNITED NATIONS MODEL REGULATIONS: N.AV.
SPECIAL INSTRUCTIONS:...................... U.S. D.O.T. REPORTABLE QUANTITY: 5000 LBS. (2268 KG).
PRODUCT: MALEIC ANHYDRIDE

SECTION 15: REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC TO THE PRODUCT:

US REGULATIONS:

TSCA INVENTORY: LISTED.

SARA TITLE III: SECTION 302: THIS PRODUCT IS NOT REGULATED UNDER SECTION 302 OF SARA AND 40CFR PART 355. SECTION 311: MALEIC ANHYDRIDE, IMMEDIATE (ACUTE) HEALTH HAZARD, DELAYED (CHRONIC) HEALTH HAZARD. SECTION 313: MALEIC ANHYDRIDE 100%.

CERCLA 102 A: MALEIC ANHYDRIDE 100%, RQ 5000 LBS.

STATE REGULATIONS:


SECTION 16: OTHER INFORMATION

ADDITIONAL INFORMATION: BARTEK INGREDIENTS INC. CANNOT ANTICIPATE ALL CONDITIONS UNDER WHICH THIS INFORMATION AND ITS PRODUCT, OR THE PRODUCTS OF OTHER MANUFACTURERS IN COMBINATION WITH ITS PRODUCT, MAY BE USED. IT IS THE USERS' RESPONSIBILITY TO ENSURE SAFE CONDITIONS FOR HANDLING, STORAGE AND DISPOSAL OF THE PRODUCT, AND TO ASSUME LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE DUE TO IMPROPER USE. THIS INFORMATION IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED IS MADE.

PREPARED BY: REGULATORY AFFAIRS.
PREPARATION DATE: SEP 25/2015