

Star Nail International, Inc. MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL NAME: Glacial Methacrylic Acid
PRODUCT NAME: X Strength Primer
PRODUCT CODE: 0000
PRODUCT USE: Organic Process Chemical
MANUFACTURER: Star Nail International, Inc.
ADDRESS: 29120 Avenue Paine
Valencia, CA 91355
24 HR. EMERGENCY TELEPHONE: CHEMTEL: 1-800-255-3924
PREPARATION/UPDATE DATE: 01/02/2014
PRINT DATE: 1/31/14
MSDS ID: M13-01

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

FOR MONOMER:

| ITEM | CHEMICAL NAME | CAS NUMBER: | WT/WT % |
|------|------------------|-------------|---------|
| 01 | Methacrylic acid | 79-41-4 | 100.00 |

| ITEM | ACGIH | | OSHA | | Company | | Recommendation | SKIN |
|------|---------|----------|---------|-------------|---------|----|----------------|------|
| | TLV-TWA | TLV-STEL | PEL TWA | PEL CEILING | | | | |
| 01 | 20 ppm | NE | 20 ppm | NE | 20 ppm | NE | NE | |
| 02 | NE | NE | NE | NE | NE | NE | NE | |

Note this material contains an inhibitor (HQ, MEHQ, BHT, etc) at <1%. The type and amount meet product specifications. Contact manufacturer for exact concentration and details on inhibitor level maintenance.

See Section 16 for Abbreviations.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING:

For Monomer:

Physical Hazards:



Unstable/Reactive upon depletion of inhibitor. **Check inhibitor levels periodically.**

Acute:

Eyes:

Material can cause corrosion to eyes and permanent eye injury.

Skin:

Material can cause corrosion to skin. Harmful if absorbed through the skin.

Inhalation:

Inhalation of vapor or mist can cause irritation of nose, throat, and lungs. May cause burns resulting in permanent damage.

Ingestion:

May be harmful if swallowed. May cause severe and permanent damage to throat, mouth and stomach.

Chronic:

Prolonged or repeated overexposure at near lethal concentrations can cause kidney damage liver damage.

CARCINOGENICITY:

None of the other components of this material are listed by IARC or ACGIH as carcinogens.

PRIMARY ROUTES OF ENTRY:

Inhalation, Skin, or Eyes.

SECTION 4 - FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

EYES:

If product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. Call a physician immediately.

INGESTION:

If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give anything by mouth to an unconscious person. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. Get medical attention immediately. *NOTE: This is a corrosive material. Do not administer any other first aid before obtaining the advice of a physician.*

INHALATION:

Remove to fresh air. Seek immediate medical attention.

SKIN:

IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash with soap and water. Immediate medical attention is required.

CLOTHING:


Remove contaminated clothing and wash thoroughly before reuse.

TREATMENT:

Treat symptoms conventionally, after thorough decontamination.

Notes to physician: This material will have corrosive effects in which case it may not be advisable to induce vomiting. Acute effects can include mucosal damage and severe laryngeal edema associated with corrosive agents.

SECTION 5 - FIRE FIGHTING MEASURES

| | | |
|--|---|---|
| FLASH POINT: | 152.6° F, 67 ° C |  |
| FLAMMABLE LIMIT, AIR VOL% LOWER: | NE | |
| UPPER: | NE | |
| AUTOIGNITION TEMPERATURE: | NE | |
| EXTINGUISHER METHOD: | Chemical foam, carbon dioxide, dry chemical. | |
| FIRE AND EXPLOSION HAZARDS: | High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during a runaway polymerization. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product. | |
| SPECIAL FIRE FIGHTING PROCEDURES: | Explosion hazard. Do not enter fire area without proper protection. Fight fire from a safe location. Heat/impurities may cause pressure to build and/or rupture closed containers, spreading fire, increasing risk of burns/injuries. Structural firefighters must wear SCBAs and full protective equipment. | |
| SENSITIVE TO MECHANICAL IMPACT: | No. | |
| SENSITIVE TO STATIC DISCHARGE: | No. | |

SECTION 6 - ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE:

Before cleaning any spill or leak, individuals involved must wear appropriate Personal Protective Equipment (e.g., goggles, gloves). Deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g. sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Maximize ventilation (open doors and windows) and secure all sources of ignition. Place into appropriate closed container(s) for disposal in accordance with local, state and federal regulations. Wash all affected areas with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.

SECTION 7- HANDLING AND STORAGE

| | |
|----------------------------------|---|
| PRECAUTIONS FOR HANDLING: | Use local explosion-proof ventilation with a minimum capture velocity of 100 ft/min (30 m/min) at point of material release. Refer to Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Hygienist. Observe precautions found on label. Do NOT use localized heat source such as band heaters to heat/melt product. Do NOT use steam. Thaw frozen drums by placing them in a heated room up to 40°C/104°F for 48 hours. |
| PRECAUTIONS FOR STORAGE: | Store containers in a cool, dry location, away from direct sunlight, heat, sparks, flame, other light sources, or sources of intense heat. Keep container closed after each use. Ground and bond all containers when transferring. Check inhibitor levels periodically , adding to the bulk material if needed. Maintain at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders the product ineffective. |

SECTION 7- HANDLING AND STORAGE CONTINUED

Product freezes at 15°C/59°F. Improper thawing can result in violent polymerization. DO NOT remove any material if stock is frozen or partially frozen. Mix during and after thawing to properly distribute inhibitor. Do not allow the temperature of this material to fall below the freezing point. Store in cool place. Keep away from direct sunlight. Limit indoor storage to approved areas equipped with automatic sprinklers. Minor deviations (7C/13F) above the recommended temperature (see below) are acceptable for short periods of time (one week) for material in transit. Store material in containers made of stainless steel, glass, aluminum, or polyethylene. **Storage at temperatures between 18°- 40°C/64°- 104°F.**

INDUSTRIAL HYGIENE PRACTICES:

This material is **corrosive**. This material is a potential skin sensitizer. Avoid prolonged contact with the product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). After use, wash hands and exposed skin with soap and water. Do not eat, drink or smoke while handling product.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**VENTILATION:**

Refer to Section 7 regarding the ventilation requirements for working with this product. Use explosion-proof local exhaust at processing equipment, including buffers, sanders, grinders and polishers. High temperature processing equipment should be well ventilated.

RESPIRATORY PROTECTION:

A respirator should be worn whenever workplace conditions warrant a respirators use. None required if airborne concentrations are maintained below the exposure limit listed in Section 2. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR §1910.134 or other appropriate governing standard.

EYE PROTECTION:

Depending on the use of this product, splash or safety glasses may be worn. If necessary, refer to U.S. OSHA 29 CFR §1910.133, or other appropriate governing standard. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.

PROTECTIVE GLOVES:

Chemical-resistant gloves should be worn whenever this material is handled. Butyl rubber or Neoprene gloves may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. If necessary, refer to U.S. OSHA 29 CFR §1910.138, or other appropriate governing standards.

OTHER PROTECTIVE EQUIPMENT:

Wear chemical resistant apron and/or boots for protecting against chemicals as appropriate. If necessary, refer to appropriate governing standards. An eyewash station and a safety shower are recommended.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------|
| APPEARANCE: | Clear, colorless liquid. |
| ODOR: | Pungent. |
| pH: | 2.0-2.2 |
| ODOR THRESHOLD: | ND |
| BOILING POINT: | 162°C/323.6°F |
| FREEZING POINT: | 15°C/59°F |
| VISCOSITY: | 1.300 mPa.s at 25°C/77°F. |
| SPECIFIC GRAVITY (H₂O=1): | NA |
| VAPOR PRESSURE: | 1.2932 hPa at 25°C/77°F. |
| PERCENT VOLATILE W/W%: | 100% |
| VAPOR DENSITY (AIR=1): | >1 |
| EVAPORATION RATE (BuAc =1): | <1 |
| SOLUBILITY IN WATER: | Completely soluble. |
| COEFFICIENT OF WATER/OIL DISTRIBUTION: | NA |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|---|
| CONDITIONS TO AVOID: | High temperatures, localized heat sources (example drum or band heaters) oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing. |
| INCOMPATIBILITY (MATERIALS TO AVOID): | Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers. |
| HAZARDOUS DECOMPOSITION PRODUCTS: | Oxides of Carbon when burned. |
| HAZARDOUS POLYMERIZATION: | MAY OCCUR: X WILL NOT OCCUR: |
| STABILITY: | Unstable/Reactive upon depletion of inhibitor. |

SECTION 11- TOXICOLOGICAL PROPERTIES

TARGET ORGANS:

For Methacrylic Acid: None Listed.

TOXICITY DATA:

For Methacrylic Acid:

| | | |
|--------------------------------|------------------|--------------------------|
| Acute oral toxicity, rat | LD ₅₀ | 2,210 mg/kg |
| Acute inhalation toxicity, rat | LC ₅₀ | 7.1 mg/l, 4H |
| Acute dermal toxicity, rabbit | LD ₅₀ | >2,000 mg/kg |
| Skin irritation, rabbit | | Corrosive |
| Eye irritation, rabbit | | Corrosive |
| Sensitization | | NOT a contact sensitizer |

SECTION 12 - ECOLOGICAL INFORMATION

AQUATIC TOXICITY:

For Methacrylic Acid:

| | | |
|---------------|------------------|----------------|
| Rainbow trout | LC ₅₀ | 85 mg/l, 96H |
| Algae | EC ₅₀ | 0.6 mg/l, 96H |
| Daphnia magna | EC ₅₀ | >130 mg/l, 48H |

ENVIRONMENTAL FATE:

For Methacrylic Acid: Elimination information (persistence and degradability)
 Biodegradability: aerobic
 86 %
 Stable to hydrolysis at pH 3,7, 11.
 Readily biodegradable, according to appropriate OECD test.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

After addition of excess inhibitor, dispose waste material in accordance with Federal, State, and Local regulations.



DISPOSAL OF EMPTY CONTAINERS:

Reuse of empty drums or containers is not recommended. Employees should be advised of the potential hazards, due to residual material, associated with empty containers. Dispose of all empty containers properly, in accordance with Federal, State and Local regulations.

SECTION 14 - TRANSPORTATION

| | |
|------------------------------|------------------------------|
| DOT/UN SHIPPING NAME: | METHACRYLIC ACID, STABILIZED |
| DOT/UN CLASS: | 8 |
| NA/UN NUMBER: | UN 2531 |
| PACKING GROUP: | II |
| LABEL: | Corrosive |
| IMDG CLASS: | |
| IMDG PG: | |
| CERCLA RQ:Product: | Type 974 |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|-----------------------------------|--|---|---|
| SARA Reporting Requirements: | NA |  |  |
| SARA Threshold Planning Quantity: | There are no specific Threshold Planning Quantities for the components of this product. | | |
| TSCA Inventory Status: | The components of this product are listed on the TSCA Inventory. | | |
| CERCLA Reportable Quantity (RQ): | NA | | |
| Other Federal Requirements: | This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR. | | |
| Other Canadian Regulations: | This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. | | |
| State Regulatory Information: | This product may contain components that are covered under specific state criteria. | | |

RISK STATEMENTS:



R34 - Causes burns.
R36/37/38 – Irritating to eyes, respiratory system and skin.
R41 - Risk of serious damage to the eyes.
R43 – May cause sensitization by skin contact

SAFETY STATEMENTS:

S2 – Keep out of reach of children
S3 – Keep in a cool place.
S7 – Keep container tightly closed.
S9 – Keep container in a well-ventilated place.
S16 – Keep away from sources of ignition – No Smoking.
S20/21 – When using do not eat or drink or smoke.
S24/25 - Avoid contact with skin and eyes.
S29 – Do not empty into drains.
S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S38 - In case of insufficient ventilation, wear suitable respiratory equipment.

SECTION 16 - OTHER INFORMATION

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) RATING:

| | | | |
|--------------------------------|---|---|---|
| HEALTH: | 3 |  |  |
| FLAMMABILITY: | 2 | | |
| REACTIVITY: | 2 | | |
| PERSONAL PROTECTIVE EQUIPMENT: | Gloves and Safety Glasses or Chemical Splash Goggles. | | |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION RATING:

| | |
|---------------|---|
| HEALTH: | 3 |
| FLAMMABILITY: | 2 |
| REACTIVITY: | 2 |

SECTION 16 - OTHER INFORMATION CONTINUED

ABBREVIATIONS:

| | | | |
|-----|--------------------------|------|---------------------------|
| NA | Not Applicable | ND | Not Determined |
| NE | Not Established | | |
| ppm | parts per million | G | Gallon |
| mg | Milligram | L | Liter |
| gm | Gram | mol | Mole |
| kg | Kilogram | μ | Micro |
| mm | Millimeter | p | Pico |
| Pa | Pascals | | |
| LC | Lethal Concentration | LD | Lethal Dose |
| TC | Toxic Concentration | TD | Toxic Dose |
| BOD | Biological Oxygen Demand | COD | Chemical Oxygen Demand |
| Lo | Lowest | ThOD | Theoretical Oxygen Demand |
| TLm | Threshold Limit | | |
| DOC | Dissolved Organic Carbon | | |
| H | Hours | M | Months |
| D | Days | Y | Years |
| W | Weeks | | |

ACGIH American Conference of Governmental Industrial Hygienist

CPR Controlled Product's Regulation

DSL Canadian Domestic Substances List

NDSL Canadian Non-domestic Substance List

IARC International Agency for Research for Cancer

NOEL No Observed Effect Level

NOAEL No Observed Adverse Effect Level

OSHA Occupational Safety and Health Administration

PEL Permissible Exposure Limit

TLV Threshold Limit Value

THIS MATERIAL SAFETY DATA SHEET IS PREPARED IN COMPLIANCE WITH FEDERAL REGULATIONS (29 CFR 1910.1200) CANADIAN WHMIS REGULATIONS, ANY APPLICABLE STATE AND LOCAL REGULATIONS SHOULD BE CONSULTED. THE ABOVE INFORMATION MAY BE BASED IN PART ON INFORMATION PROVIDED BY COMPONENT SUPPLIERS AND IS BELIEVED TO BE CORRECT AS OF THE DATE HEREOF. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OF THESE DATA, THE RESULTS TO BE OBTAINED FROM THE USE OF THE MATERIAL, OR THE HAZARDS CONNECTED WITH SUCH USE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATE HEREOF MAY SUGGEST MODIFICATION OF THE INFORMATION, WE ASSUME NO RESPONSIBILITY FOR THE RESULT OF ITS USE. THIS INFORMATION AND MATERIAL IS FURNISHED ON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS/HER OWN DETERMINATION AS TO THE SUITABILITY OF THE MATERIAL FOR HIS/HER PARTICULAR PURPOSE AND ON THE CONDITION THAT HE/SHE ASSUME THE RISK OF HIS/HER USE THEREOF.

Star Nail International, Inc. MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL NAME: Glacial Methacrylic Acid
PRODUCT NAME: Primer Pen
TRADE NAME/PRODUCT CODE: 0000
PRODUCT USE: Organic Process Chemical
MANUFACTURER: Star Nail International, Inc.
ADDRESS: 29120 Avenue Paine
Valencia, CA 91355
24 HR. EMERGENCY TELEPHONE: CHEMTEL: 1-800-255-3924
PREPARATION/UPDATE DATE: 01/02/2014
PRINT DATE: 2/4/14
MSDS ID: M13-01

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

FOR MONOMER:

| ITEM | CHEMICAL NAME | CAS NUMBER: | WT/WT % |
|------|---------------------|-------------|------------|
| 01 | Methacrylic acid | 79-41-4 | 60.0-100.0 |
| 02 | Other ester adducts | NA | 0.0-2.0 |

| ITEM | ACGIH | | OSHA | | Company | | Recommendation | SKIN |
|------|---------|----------|---------|-------------|---------|----|----------------|------|
| | TLV-TWA | TLV-STEL | PEL TWA | PEL CEILING | | | | |
| 01 | 20 ppm | NE | 20 ppm | NE | 20 ppm | NE | NE | |
| 02 | NE | NE | NE | NE | NE | NE | NE | |

Note this material contains an inhibitor (HQ, MEHQ, BHT, etc) at <1%. The type and amount meet product specifications. Contact manufacturer for exact concentration and details on inhibitor level maintenance.

See Section 16 for Abbreviations.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING:

For Monomer:

Physical Hazards:



Unstable/Reactive upon depletion of inhibitor. **Check inhibitor levels periodically.**

Acute:

Eyes:

Material can cause corrosion to eyes and permanent eye injury.

Skin:

Material can cause corrosion to skin. Harmful if absorbed through the skin.

Inhalation:

Inhalation of vapor or mist can cause irritation of nose, throat, and lungs. May cause burns resulting in permanent damage.

Ingestion:

May be harmful if swallowed. May cause severe and permanent damage to throat, mouth and stomach.

Chronic:

Prolonged or repeated overexposure at near lethal concentrations can cause kidney damage liver damage.

CARCINOGENICITY:

None of the other components of this material are listed by IARC or ACGIH as carcinogens.

PRIMARY ROUTES OF ENTRY:

Inhalation, Skin, or Eyes.

SECTION 4 - FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

EYES:

If product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. Call a physician immediately.

INGESTION:

If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give anything by mouth to an unconscious person. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. Get medical attention immediately. *NOTE: This is a corrosive material. Do not administer any other first aid before obtaining the advice of a physician.*

INHALATION:

Remove to fresh air. Seek immediate medical attention.

SKIN:

IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash with soap and water. Immediate medical attention is required.

CLOTHING:


Remove contaminated clothing and wash thoroughly before reuse.

TREATMENT:

Treat symptoms conventionally, after thorough decontamination.

Notes to physician: This material will have corrosive effects in which case it may not be advisable to induce vomiting. Acute effects can include mucosal damage and severe laryngeal edema associated with corrosive agents.

SECTION 5 - FIRE FIGHTING MEASURES

| | | |
|--|---|---|
| FLASH POINT: | 152.6° F, 67 ° C |  |
| FLAMMABLE LIMIT, AIR VOL% LOWER: | NE | |
| UPPER: | NE | |
| AUTOIGNITION TEMPERATURE: | NE | |
| EXTINGUISHER METHOD: | Chemical foam, carbon dioxide, dry chemical. | |
| FIRE AND EXPLOSION HAZARDS: | High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during a runaway polymerization. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product. | |
| SPECIAL FIRE FIGHTING PROCEDURES: | Explosion hazard. Do not enter fire area without proper protection. Fight fire from a safe location. Heat/impurities may cause pressure to build and/or rupture closed containers, spreading fire, increasing risk of burns/injuries. Structural firefighters must wear SCBAs and full protective equipment. | |
| SENSITIVE TO MECHANICAL IMPACT: | No. | |
| SENSITIVE TO STATIC DISCHARGE: | No. | |

SECTION 6 - ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE:

Before cleaning any spill or leak, individuals involved must wear appropriate Personal Protective Equipment (e.g., goggles, gloves). Deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g. sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Maximize ventilation (open doors and windows) and secure all sources of ignition. Place into appropriate closed container(s) for disposal in accordance with local, state and federal regulations. Wash all affected areas with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.

SECTION 7- HANDLING AND STORAGE

PRECAUTIONS FOR HANDLING:

Use local explosion-proof ventilation with a minimum capture velocity of 100 ft/min (30 m/min) at point of material release. Refer to Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Hygienist. Observe precautions found on label. Do NOT use localized heat source such as band heaters to heat/melt product. Do NOT use steam. Thaw frozen drums by placing them in a heated room up to 40°C/104°F for 48 hours.

PRECAUTIONS FOR STORAGE:

Store containers in a cool, dry location, away from direct sunlight, heat, sparks, flame, other light sources, or sources of intense heat. Keep container closed after each use. Ground and bond all containers when transferring. **Check inhibitor levels periodically**, adding to the bulk material if needed. Maintain at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders the product ineffective.

SECTION 7- HANDLING AND STORAGE CONTINUED

Product freezes at 15°C/59°F. Improper thawing can result in violent polymerization. DO NOT remove any material if stock is frozen or partially frozen. Mix during and after thawing to properly distribute inhibitor. Do not allow the temperature of this material to fall below the freezing point. Store in cool place. Keep away from direct sunlight. Limit indoor storage to approved areas equipped with automatic sprinklers. Minor deviations (7C/13F) above the recommended temperature (see below) are acceptable for short periods of time (one week) for material in transit. Store material in containers made of stainless steel, glass, aluminum, or polyethylene. **Storage at temperatures between 18°- 40°C/64°- 104°F.**

INDUSTRIAL HYGIENE PRACTICES:

This material is **corrosive**. This material is a potential skin sensitizer. Avoid prolonged contact with the product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). After use, wash hands and exposed skin with soap and water. Do not eat, drink or smoke while handling product.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**VENTILATION:**

Refer to Section 7 regarding the ventilation requirements for working with this product. Use explosion-proof local exhaust at processing equipment, including buffers, sanders, grinders and polishers. High temperature processing equipment should be well ventilated.

RESPIRATORY PROTECTION:

A respirator should be worn whenever workplace conditions warrant a respirators use. None required if airborne concentrations are maintained below the exposure limit listed in Section 2. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR §1910.134 or other appropriate governing standard.

EYE PROTECTION:

Depending on the use of this product, splash or safety glasses may be worn. If necessary, refer to U.S. OSHA 29 CFR §1910.133, or other appropriate governing standard. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.

PROTECTIVE GLOVES:

Chemical-resistant gloves should be worn whenever this material is handled. Butyl rubber or Neoprene gloves may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. If necessary, refer to U.S. OSHA 29 CFR §1910.138, or other appropriate governing standards.

OTHER PROTECTIVE EQUIPMENT:

Wear chemical resistant apron and/or boots for protecting against chemicals as appropriate. If necessary, refer to appropriate governing standards. An eyewash station and a safety shower are recommended.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------|
| APPEARANCE: | Clear, colorless liquid. |
| ODOR: | Pungent. |
| pH: | 2.0-2.2 |
| ODOR THRESHOLD: | ND |
| BOILING POINT: | 162°C/323.6°F |
| FREEZING POINT: | 15°C/59°F |
| VISCOSITY: | 1.300 mPa.s at 25°C/77°F. |
| SPECIFIC GRAVITY (H₂O=1): | NA |
| VAPOR PRESSURE: | 1.2932 hPa at 25°C/77°F. |
| PERCENT VOLATILE W/W%: | 100% |
| VAPOR DENSITY (AIR=1): | >1 |
| EVAPORATION RATE (BuAc =1): | <1 |
| SOLUBILITY IN WATER: | Completely soluble. |
| COEFFICIENT OF WATER/OIL DISTRIBUTION: | NA |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|---|
| CONDITIONS TO AVOID: | High temperatures, localized heat sources (example drum or band heaters) oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing. |
| INCOMPATIBILITY (MATERIALS TO AVOID): | Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers. |
| HAZARDOUS DECOMPOSITION PRODUCTS: | Oxides of Carbon when burned. |
| HAZARDOUS POLYMERIZATION: | MAY OCCUR: X WILL NOT OCCUR: |
| STABILITY: | Unstable/Reactive upon depletion of inhibitor. |

SECTION 11- TOXICOLOGICAL PROPERTIES

TARGET ORGANS:

For Methacrylic Acid: None Listed.

TOXICITY DATA:

For Methacrylic Acid:

| | | |
|--------------------------------|------------------|--------------------------|
| Acute oral toxicity, rat | LD ₅₀ | 2,210 mg/kg |
| Acute inhalation toxicity, rat | LC ₅₀ | 7.1 mg/l, 4H |
| Acute dermal toxicity, rabbit | LD ₅₀ | >2,000 mg/kg |
| Skin irritation, rabbit | | Corrosive |
| Eye irritation, rabbit | | Corrosive |
| Sensitization | | NOT a contact sensitizer |

SECTION 12 - ECOLOGICAL INFORMATION

AQUATIC TOXICITY:

For Methacrylic Acid:

| | | |
|---------------|------------------|----------------|
| Rainbow trout | LC ₅₀ | 85 mg/l, 96H |
| Algae | EC ₅₀ | 0.6 mg/l, 96H |
| Daphnia magna | EC ₅₀ | >130 mg/l, 48H |

ENVIRONMENTAL FATE:

For Methacrylic Acid: Elimination information (persistence and degradability)
 Biodegradability: aerobic
 86 %
 Stable to hydrolysis at pH 3,7, 11.
 Readily biodegradable, according to appropriate OECD test.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

After addition of excess inhibitor, dispose waste material in accordance with Federal, State, and Local regulations.



DISPOSAL OF EMPTY CONTAINERS:

Reuse of empty drums or containers is not recommended. Employees should be advised of the potential hazards, due to residual material, associated with empty containers. Dispose of all empty containers properly, in accordance with Federal, State and Local regulations.

SECTION 14 - TRANSPORTATION

| | |
|------------------------------|------------------------------|
| DOT/UN SHIPPING NAME: | METHACRYLIC ACID, STABILIZED |
| DOT/UN CLASS: | 8 |
| NA/UN NUMBER: | UN 2531 |
| PACKING GROUP: | II |
| LABEL: | Corrosive |
| IMDG CLASS: | |
| IMDG PG: | |
| CERCLA RQ: | |

SECTION 15 - REGULATORY INFORMATION



| | | |
|-----------------------------------|--|---|
| SARA Reporting Requirements: | NA |   |
| SARA Threshold Planning Quantity: | There are no specific Threshold Planning Quantities for the components of this product. | |
| TSCA Inventory Status: | The components of this product are listed on the TSCA Inventory. | |
| CERCLA Reportable Quantity (RQ): | NA | |
| Other Federal Requirements: | This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR. | |
| Other Canadian Regulations: | This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. | |
| State Regulatory Information: | This product may contain components that are covered under specific state criteria. | |

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|-------------------------|---|
| RISK STATEMENTS: | R34 - Causes burns. R36/37/38 – Irritating to eyes, respiratory system and skin. R41 - Risk of serious damage to the eyes. R43 – May cause sensitization by skin contact |
|-------------------------|---|

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|---------------------------|---|
| SAFETY STATEMENTS: | S2 – Keep out of reach of children S3 – Keep in a cool place. S7 – Keep container tightly closed. S9 – Keep container in a well-ventilated place. S16 – Keep away from sources of ignition – No Smoking. S20/21 – When using do not eat or drink or smoke. S24/25 - Avoid contact with skin and eyes. S29 – Do not empty into drains. S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection. S38 - In case of insufficient ventilation, wear suitable respiratory equipment. |
|---------------------------|---|

SECTION 16 - OTHER INFORMATION

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) RATING:

| | | |
|--------------------------------|---|---|
| HEALTH: | 3 |   |
| FLAMMABILITY: | 2 | |
| REACTIVITY: | 2 | |
| PERSONAL PROTECTIVE EQUIPMENT: | Gloves and Safety Glasses or Chemical Splash Goggles. | |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION RATING:

| | |
|---------------|---|
| HEALTH: | 3 |
| FLAMMABILITY: | 2 |
| REACTIVITY: | 2 |

SECTION 16 - OTHER INFORMATION CONTINUED

ABBREVIATIONS:

| | | | |
|-----|--------------------------|------|---------------------------|
| NA | Not Applicable | ND | Not Determined |
| NE | Not Established | | |
| ppm | parts per million | G | Gallon |
| mg | Milligram | L | Liter |
| gm | Gram | mol | Mole |
| kg | Kilogram | μ | Micro |
| mm | Millimeter | p | Pico |
| Pa | Pascals | | |
| LC | Lethal Concentration | LD | Lethal Dose |
| TC | Toxic Concentration | TD | Toxic Dose |
| BOD | Biological Oxygen Demand | COD | Chemical Oxygen Demand |
| Lo | Lowest | ThOD | Theoretical Oxygen Demand |
| TLm | Threshold Limit | | |
| DOC | Dissolved Organic Carbon | | |
| H | Hours | M | Months |
| D | Days | Y | Years |
| W | Weeks | | |

ACGIH American Conference of Governmental Industrial Hygienist
 CPR Controlled Product's Regulation
 DSL Canadian Domestic Substances List
 NDSL Canadian Non-domestic Substance List
 IARC International Agency for Research for Cancer
 NOEL No Observed Effect Level
 NOAEL No Observed Adverse Effect Level
 OSHA Occupational Safety and Health Administration
 PEL Permissible Exposure Limit
 TLV Threshold Limit Value

THIS MATERIAL SAFETY DATA SHEET IS PREPARED IN COMPLIANCE WITH FEDERAL REGULATIONS (29 CFR 1910.1200) CANADIAN WHMIS REGULATIONS, ANY APPLICABLE STATE AND LOCAL REGULATIONS SHOULD BE CONSULTED. THE ABOVE INFORMATION MAY BE BASED IN PART ON INFORMATION PROVIDED BY COMPONENT SUPPLIERS AND IS BELIEVED TO BE CORRECT AS OF THE DATE HEREOF. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OF THESE DATA, THE RESULTS TO BE OBTAINED FROM THE USE OF THE MATERIAL, OR THE HAZARDS CONNECTED WITH SUCH USE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATE HEREOF MAY SUGGEST MODIFICATION OF THE INFORMATION, WE ASSUME NO RESPONSIBILITY FOR THE RESULT OF ITS USE. THIS INFORMATION AND MATERIAL IS FURNISHED ON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS/HER OWN DETERMINATION AS TO THE SUITABILITY OF THE MATERIAL FOR HIS/HER PARTICULAR PURPOSE AND ON THE CONDITION THAT HE/SHE ASSUME THE RISK OF HIS/HER USE THEREOF.

