MATERIAL SAFETY DATA SHEET

4000=BULK=ACTIVATOR=

This Material Safety Data Sheet (MSDS) contains toxicological, industrial hygiene, and environmental information for your employees. Please make sure they are provided with this information. It also contains information to assist with meeting community right-to-know and emergency response reporting requirements under SARA Title III and other laws. If you resell this product, this MSDS must be given to the buyer or the information incorporated into your MSDS. Disregard any previous edition of this MSDS.

This MSDS was prepared according to the OSHA Hazard Communication Standard (29 CFR §1910.1200) and the proposed CMA/ANSI MSDS Standard (ANSI Z400.1) by Hazard Information Services™, St. Paul-Ramsey Medical Center, 640 Jackson Street, St. Paul MN 55101-2505

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: 4000 Bulk Activator
PRODUCT NUMBER: None- 4000
CHEMICAL NAME: Mixture
SYNONYM(S): None

RESPONSIBLE PARTY: Northwest Screen Systems Co.
4204 East Lake Street
Minneapolis, MN 55416

TELEPHONE NUMBERS

PRODUCT INFORMATION (24 HR): Northwest Screen Systems Co.
(612)-729-7365 or 1-800-221-4079

MEDICAL EMERGENCIES (24 HR): Hazard Information Services™
1-800-228-5635 EXT-150
(612) 221-3999 EXT-150

TRANSPORTATION EMERGENCIES (24 HR): Hazard Information Services™
1-800-228-5635 EXT-150
(612) 221-3999 EXT-150

Revision Number: 01 Issue Date: 08/02/93 MSDS Number: 114-000026
NDA = No Data Available NA = Not Applicable
### SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name (CAS#)</th>
<th>%</th>
<th>Exposure Limits</th>
<th>References</th>
</tr>
</thead>
</table>
| 1,1,1-Trichloroethane (71-55-6) | > 90 | 1900 mg/m³ TWA-PEL  
2450 mg/m³ STEL-PEL  
1910 mg/m³ TWA-TLV  
2460 mg/m³ STEL-TLV | OSHA 1989  
ACGIH 92-93 |
| Acetone (67-64-1)            | ≈ 2 | 1800 mg/m³ TWA-PEL  
2400 mg/m³ STEL-PEL  
1780 mg/m³ TWA-TLV  
2380 mg/m³ STEL-TLV | OSHA 1989  
ACGIH 92-93 |
| 1,4-Dioxane (123-91-1)       | ≈ 2 | 90 mg/m³ TWA-PEL†  
90 mg/m³ TWA-TLV† | OSHA 1989  
ACGIH 92-93 |
| Isopropyl alcohol (67-63-0)  | < 1 | 980 mg/m³ TWA-PEL  
1225 mg/m³ STEL-PEL  
983 mg/m³ TWA-TLV  
1230 mg/m³ STEL-TLV | OSHA 1989  
ACGIH 92-93 |
| Hydroquinone (123-31-9)      | < 1 | 240 mg/m³ TWA-PEL  
92 mg/m³ TWA-TLV | OSHA 1989  
ACGIH 92-93 |

† = Skin designation
SECTION 3: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR: NDA CLEAR LIQUID, Acetone odor

STATEMENT OF HAZARD: DANGER!

ACUTE HAZARDS
• Flammable liquid
• May cause irritation to eyes and skin
• May cause adverse systemic effects

CHRONIC HAZARDS
• May cause adverse systemic effects
• Contains suspected animal carcinogens

NFPA RATING:
Health - 2 Flammability - 3 Reactivity - 0 Special - NDA

HMIS RATING:
Health - 2 Flammability - 3 Reactivity - 0 Protective Equipment - X

NFPA and HMIS ratings are assigned by Hazard Information Services based on criteria published by the National Fire Protection Association and the National Paint & Coatings Association respectively, and should only be interpreted by personnel trained in these rating systems.

1990 DOT Emergency Response Guide Book: NDA

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY
• Eye contact
• Skin contact
• Ingestion
• Inhalation

EYE CONTACT
• May cause temporary irritation or discomfort to eyes

SKIN CONTACT
• May cause irritation to skin
• May cause drying and decanting of skin

INGESTION
• Low order of toxicity from ingestion
• Aspiration of product into lungs can cause chemical pneumonitis

INHALATION
• Toxic if inhaled
• The severity of the injury depends on the duration of exposure and the first aid procedures administered

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TARGET ORGANS
- Eyes (irritation)
- Skin (irritation)
- Gastrointestinal tract (irritation)
- Respiratory tract (chemical pneumonitis)
- Central nervous system (depression)
- Cardiovascular system (blood pressure depression, cardiac sensitization, ventricular arrhythmias)
- Kidney

REPRODUCTIVE OR DEVELOPMENTAL EFFECTS
- None of the components are listed in TERIS
- None of the components are listed in Shepard's Catalog of Teratogenic Agents
- None of the components are listed in the State of California's Proposition 65 list of chemicals known by the State to cause developmental or reproductive toxicity
- Acetone has been reported in the literature to cause adverse reproductive and developmental effects in laboratory animals

CANCER
- In carcinogenicity studies conducted by the NTP, 1,4-dioxane was determined to be an animal carcinogen
- In carcinogenicity studies conducted by the NTP, hydroquinone showed some evidence of carcinogenicity
- IARC lists 1,4-dioxane as a possible human carcinogen (Group 2B)
- IARC lists hydroquinone as an unclassifiable human carcinogen (Group 3)
- 1,4-Dioxane is listed in the State of California's Proposition 65 list of chemicals known by the State to cause cancer

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
- Eye disorders
- Skin disorders
- Gastrointestinal tract disorders
- Respiratory tract disorders
- Central nervous system disorders
- Cardiovascular disorders
- Kidney disorders

SECTION 4: FIRST AID

For Assistance With Medical Emergencies Contact Hazard Information Services at 1-800-228-5635 or (612) 221-3999, 24 Hours-A-Day

EYE CONTACT
- Immediately flush with plenty of water
- Remove contact lenses and continue flushing for at least 15 minutes
- Seek medical attention if irritation persists or blurred vision develops

SKIN CONTACT
- Remove contaminated clothing
- Flush affected area with water for at least 15 minutes
- Wash affected area with mild soap and water
- Seek medical attention if persistent irritation develops

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INGESTION
- Immediately rinse mouth out with plenty of water
- If within 30 minutes after ingestion, give victim a small glass of water or milk (NEVER give anything by mouth to an unconscious person)
- Do not induce vomiting
- Seek medical attention

INHALATION
- Remove to fresh air
- Seek medical attention

NOTES TO PHYSICIANS
- Contact Hazard Information Services™ for assistance with the management of exposures to this product

SECTION 5: FIRE FIGHTING MEASURES

Flash point and Method: NDA
Flammable Limits: NDA
Auto Ignition Temperature: NDA

GENERAL HAZARD
- Keep away from heat or open flame

EXTINGUISHING MEDIA
- Use water, alcohol foam, dry chemical or carbon dioxide

FIRE FIGHTING INSTRUCTIONS
- Wear appropriate protective clothing
- Use self-contained breathing apparatus
- Vapors are heavier than air and will collect in low areas

HAZARDOUS COMBUSTION PRODUCTS
- Smoke
- Oxides of carbon
- Hydrogen chloride
- Phosgene
- Various chlorinated hydrocarbons and hydrocarbons

SECTION 6: ACCIDENTAL RELEASE MEASURES

For Assistance With Accidental Releases Contact Hazard Information Services™
At 1-800-228-5635 Or (612) 221-3999, 24 Hours-A-Day

GENERAL
- Extinguish all sources of flame or spark
- Do not attempt to clean up chemical spills without appropriate personal protective equipment
  (see section 8)
4000 BULK ACTIVATOR  
NORTHWEST SCREEN SYSTEMS

- For small spills, take up material with sand or other noncombustible absorbent and place in sealable containers for disposal
- For large spills, dike material and recover using equipment suitable for a flammable material and place in sealable containers for disposal
- Keep waste out of sewers, watersheds, and waterways
- See section 13 for information on the disposal of recovered material

REPORTABLE QUANTITY (RQ)
- None

SECTION 7: HANDLING AND STORAGE

Storage Temperature: Ambient  
Storage Pressure: Atmospheric

GENERAL
- Use with adequate ventilation
- Store in cool place away from ignition sources
- Store away from incompatible materials (see section 10)
- Use with proper personal protective equipment (see section 8)
- Empty containers may retain hazardous properties, follow all MSDS/label warnings even after container is emptied
- Do not reuse empty container for food, clothing, or products for human or animal consumption
- Keep this and all chemicals out of reach of children

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS
- Provide sufficient mechanical ventilation to maintain exposure levels below TLVs

PERSONAL PROTECTION

RESPIRATOR
- Under normal conditions in the presence of adequate ventilation, no respiratory protection is necessary
- If ventilation is inadequate, the use of an approved air purifying respirator may be necessary
- Seek professional advice prior to respirator selection and use
- Follow OSHA Respirator regulations (29 CFR §1910.133)
- If there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection, use a positive pressure air supplied respirator

EYE PROTECTION
- Wear safety glasses with side shields (or goggles)

PROTECTIVE CLOTHING
- Prevent skin contact by wearing chemically resistant gloves, apron, impervious clothing, and boots

SAFETY EQUIPMENT
- Eyewash fountain
- Safety shower
GENERAL
- Use good personal and industrial hygiene practices
- Wash thoroughly after using product
- Keep product off of clothing and equipment
- Launder contaminated clothing before re-use
- Avoid transferring product from hand to mouth while eating, drinking, or smoking
- Do not eat, drink, or smoke in any work area

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
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<th>Property</th>
<th>Value</th>
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<td>Physical State</td>
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<td>Acetone</td>
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<td>Vapor Pressure</td>
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SECTION 10: STABILITY AND REACTIVITY

GENERAL
- This product will not polymerize

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID
- Water
- Reactive metals such as aluminum and magnesium
- Strong oxidizers
- Strong alkalies
- Always establish the compatibility of materials before mixing or storing together

HAZARDOUS DECOMPOSITION PRODUCTS
- Heat
- Oxides of carbon
- Hydrogen chloride
- Phosgene
- Various chlorinated hydrocarbons and hydrocarbons

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SECTION 11: TOXICOLOGICAL INFORMATION

This section provides relevant information with regard to any toxicity studies performed on the product, or the "pure" form to the component(s). This information can be subject to misinterpretation. Therefore, it is essential that the following information be interpreted by individuals trained in its evaluation. For assistance with interpreting this information, contact Hazard Information Services at 1-800-228-5635 or (612) 221-3999, 24 hours-a-day.

PRODUCT BASED

- None

INGREDIENT BASED

- This product contains 1,1,1-trichloroethane (CAS# 71-55-6). Persons exposed to its vapor at 900 to 1000 ppm for 20 minutes experienced signs of central nervous system depression such as lightheadedness, incoordination, and impaired equilibrium. Exposure to 2,000 ppm for 5 minutes, 10,000 ppm for 30 minutes, and 20,000 ppm for 60 minutes are expected to produce disturbances in equilibrium, marked incoordination, and coma (and possibly death), respectively. Prolonged or repeated skin contact with the liquid can cause irritation and redness. No cardiovascular, liver, or kidney damage were observed in workers exposed to this chemical's vapor (some exposures exceeding 200 ppm) for several months to 6 years. IARC has determined that there are no data to support the carcinogenicity of this chemical in humans and inadequate data to support its carcinogenicity in experimental animals (IARC Group 3). EPA has determined that this chemical is not classifiable as to its carcinogenicity in humans based on a lack of carcinogenicity data for humans and its lack of carcinogenicity in experimental animals (EPA Group D).

- This product contains acetone (CAS# 67-64-1). Inhalation of this chemical at concentrations of 500 to 1000 ppm and greater can cause irritation of the nose, throat and lungs; headaches and lightheadedness may also be present. Very high concentrations (12,000 ppm and above) this chemical is a central nervous system depressant causing dizziness, weakness, and loss of consciousness. Exposure to 20;000 ppm for a brief period of time has been fatal. Repeated skin contact with this liquid can cause irritation and dryness; direct contact with the eye can cause irritation and chemical injury. Ingestion of this chemical by laboratory animals has caused anemia (lowered blood cell count) and kidney damage. Reproductive and developmental toxicity have also been observed in experimental animals either ingesting or inhaling this chemical. These effects have not been reported in humans. The EPA has determined that this chemical is not classifiable as to its carcinogenicity in humans based on a lack of carcinogenicity data for humans and experimental animals (EPA Group D). This chemical has been shown to potentiate the toxicity of other organic solvents such as ethanol, carbon tetrachloride, trichloroethylene, acrylonitrile, and n-hexane in experimental animals.

- This product contains 1,4-dioxane (CAS# 123-91-1). Inhalation exposure to this chemical causes eye, nose and throat irritation and central nervous system depression (e.g. confusion, ataxia, drowsiness). Specifically, humans exposed to 50 ppm for 6 hours experienced eye irritation through exposure; exposure to 300 ppm for 15 minutes produced eye, nose, and throat irritation; exposure to 1600 ppm for 10 minutes caused immediate burning of the eyes with watering; 5500 ppm for 1 minute produced slight vertigo. Inhalation exposure to very high concentrations have resulted in liver and kidney damage, pulmonary edema, coma and death. The liquid applied to the skin causes dryness and dermatitis. IARC has determined that
this chemical is possibly carcinogenic to humans (IARC Group 2B). The U.S. EPA has determined that this chemical is a probable human carcinogen (Group B2).

- This product contains isopropyl alcohol (CAS# 67-63-0). Isopropyl alcohol is an irritant of eyes and mucous membranes, and at high concentrations can cause central nervous system depression. The odor threshold for isopropyl alcohol is 40 to 200 ppm. Humans exposed to 400 ppm for 3 to 5 minutes experienced mild irritation of the eyes, nose, and throat; at 800 ppm the atmosphere was reported to be uncomfortable. Fatal doses in human adults have been estimated to be between 160 and 240 mL. Death following ingestion often occurs in 24 to 36 hours, due to respiratory paralysis. Isopropyl alcohol has been found to potentiate the toxicity of other solvents, particularly carbon tetrachloride. IARC reports that isopropyl alcohol has not been tested adequately in animals to assess its carcinogenicity.

- This product contains hydroquinone (CAS# 123-31-9). This chemical has been reported to affect the eyes. Acute exposures cause irritation; chronic exposures can produce discoloration and structural changes that may result in loss of visual acuity. Lethal doses of this chemical have not been accurately evaluated, but no signs of toxicity were seen in subjects who ingested 300 to 500 mg of hydroquinone daily for 3 to 5 months. Repeated skin contact with creams containing this chemical (>5%) produce skin irritation, allergic sensitization, dermatitis, and depigmentation. A NTP study reports some evidence of carcinogenicity in rat and mouse feeding studies (gavage).

SECTION 12: ECOLOGICAL INFORMATION

NDA

SECTION 13: DISPOSAL INFORMATION

GENERAL
- Consult a local expert for advice on the disposal of this material
- Characteristics of recovered material may differ from those of original material
- Ensure that disposal is in compliance with local, state, and federal regulations

SECTION 14: TRANSPORT INFORMATION

DOT (Department of Transportation)
PROPER SHIPPING NAME: ORM-A

SECTION 15: REGULATORY INFORMATION

Chemical Inventories
- TSCA: All components of this product are included on the Toxic Substances Control Act (TSCA) Inventory [USA]

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Reportable Quantities (RQ)

- CERCLA (40 CFR 302.4)
  1,1,1-Trichloroethane (71-55-6)  1000 lbs (454 kg)
  Acetone (67-64-1)  5000 lbs (2270 kg)
- US DOT (49 CFR 172.101)
  1,1,1-Trichloroethane (71-55-6)  1000 lbs (454 kg)
  Acetone (67-64-1)  5000 lbs (2270 kg)

SARA TITLE III (Superfund Amendments and Reauthorization Act)

§302 Extremely Hazardous Materials
- Hydroquinone (123-31-9)

§304 Notification Of Accidental Release
- 1,1,1-Trichloroethane (71-55-6)
- Acetone (67-64-1)
- Hydroquinone (123-31-9)

§311/312 Hazard Categories
  - Immediate (Acute) Health Effects: YES
  - Delayed (Chronic) Health Effects: YES
  - Fire Hazard: YES
  - Sudden Release of Pressure Hazard: NO
  - Reactivity Hazard: NO

§313 Toxic Chemical Release Reporting
- 1,1,1-Trichloroethane (71-55-6)
- Acetone (67-64-1)
- 1,4-Dioxane (123-91-1)
- Hydroquinone (123-31-9)

STATE REGULATORY INFORMATION:

- The following components are listed to satisfy State Hazard Communication requirements

<table>
<thead>
<tr>
<th>Name (CAS#)</th>
<th>%</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
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</table>

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SECTION 16: OTHER INFORMATION

ABBREVIATIONS
ACGIH  American Conference of Governmental Industrial Hygienists
CAS#  Chemical Abstracts Service Number
IARC  International Agency for Research on Cancer
LEL  Lower Explosion Limit
MSDS  Material Safety Data Sheet
NTP  National Toxicology Program
OSHA  Occupational Safety and Health Administration
STEL  Short Term Exposure Limit
TWA  Time Weighted Average
UEL  Upper Explosion Limit
RTECS  Registry of Toxic Effects of Chemical Substances
TERIS  Teratogen Information System

REVISION SUMMARY
REASON FOR ISSUE:  First issue
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SUPERSEDE:  No
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