Sartomer Company
Material Safety Data Sheet

Product: SR454
Revised Date: 01-17-2005
MSDS ID: D-006236
Replaces Date: 05-13-2003

01. GENERAL INFORMATION
Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

02. SUMMARY OF HAZARDS
WARNING
PHYSICAL HAZARDS: Unstable (reactive) upon depletion of inhibitor

ACUTE HEALTH EFFECTS: Moderate eye irritant
(SHORT-TERM) Slight skin irritant/may cause skin sensitization
May cause respiratory tract irritation
No data found; not expected to be an ingestion hazard
May be absorbed through the skin

CHRONIC HEALTH EFFECTS: No appropriate human or animal chronic health effects
(LONG-TERM) data known to exist.

03. COMPONENTS

<table>
<thead>
<tr>
<th>COMPONENT NAME</th>
<th>CAS NUMBER</th>
<th>% COMPOSITION (BY WT.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethoxylated Trimethylolpropane Triacrylate Esters</td>
<td>28961-43-5</td>
<td>AP 100</td>
</tr>
</tbody>
</table>

04. PHYSICAL AND CHEMICAL DATA

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE/DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILING POINT</td>
<td>N/DA</td>
</tr>
<tr>
<td>FREEZING POINT</td>
<td>N/DA</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (H2O=1 AT 39.2F)</td>
<td>AP 1.10-1.12 at 25C/77F</td>
</tr>
<tr>
<td>pH</td>
<td>AP 6.8 to 7.2</td>
</tr>
<tr>
<td>DRY POINT</td>
<td>N/AP</td>
</tr>
<tr>
<td>VOLATILE CHARACTERISTICS</td>
<td>Negligible</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td></td>
</tr>
</tbody>
</table>

Date Printed: 08-11-2006
AP 30 to 90 cps at 25C/77F Negligible
VAPOR PRESSURE STABILITY
Negligible Stable
VAPOR SP GR (AIR=1 AT 60 - 90F) HAZARDOUS POLYMERIZATION
N/AP May occur

APPEARANCE AND ODOR
Clear, light yellow liquid

CONDITIONS AND MATERIALS TO AVOID
High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing;
Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

HAZARDOUS DECOMPOSITION PRODUCTS
Acrid smoke-fumes/carbon monoxide/carbon dioxide and perhaps other toxic vapors may be released during a fire involving this product.

05. OCCUPATIONAL EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>SOURCE</th>
<th>DATE</th>
<th>TYPE</th>
<th>VALUE</th>
<th>TIME</th>
</tr>
</thead>
</table>

A PEL or TLV has not been established

06. FIRE AND EXPLOSION

FLASH POINT METHOD=(PMCC) AUTOIGNITION TEMP. METHOD=
GT 93C/200F N/DA

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/DA UPPER: N/DA

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 runaway polymerization.

EXTINGUISHING MEDIA
Dry chemical
CO2
Water spray
Foam
Water fog

SPECIAL FIREFIGHTING PROCEDURES
Do not enter fire area without proper protection. See Section 4 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water
may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION
No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT -- PRIMARY ROUTE
May cause moderate irritation with symptoms including burning sensation, tearing, redness or swelling.

SKIN ABSORPTION -- PRIMARY ROUTE
Some acrylate materials are absorbed through the skin. Although no appropriate human or animal health effects data are known to exist, the potential for skin absorption does exist for this material.

SKIN IRRITATION -- PRIMARY ROUTE
May cause minor skin irritation. Symptoms of irritation may include a slight localized redness or rash and swelling.
Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION
Although no appropriate human or animal health effects data is known to exist, this material is not expected to be an ingestion hazard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
This material or its emissions may induce an allergic or sensitization reaction and thereby aggravate systemic disease.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION
If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION
Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.
SKIN PROTECTION
Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

ENGINEERING CONTROLS
If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

OTHER HYGIENIC PRACTICES
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES
Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

09. EMERGENCY AND FIRST AID
INHALATION
If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT
In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention.

SKIN CONTACT
Remove contaminated clothing as needed. Wash skin thoroughly with mild soap/water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first.

INGESTION
Ingestion unlikely. However, if ingested, obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES
If pain, blinking, tears, or redness continue, patient should contact ophthalmologist.

10. SPILL AND DISPOSAL
PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED
Spilled or released material may polymerize and release heat/gases. Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up. Dike and recover large spill. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. Wash spill area with a strong detergent and water
solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

WASTE DISPOSAL METHODS
Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

11. ADDITIONAL PRECAUTIONS
HANDLING AND STORAGE PROCEDURES
Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Most acrylic monomers have low viscosities; hence, pouring, material transfer and processing of these materials do not necessitate heating. Viscous monomers may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 60C/140F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 60C/140F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.
DECONTAMINATION PROCEDURES
Follow standard plant procedures or supervisor's instructions for decontamination operations.

12. LABEL INFORMATION

USE STATEMENT
FOR INDUSTRIAL USE ONLY

SIGNAL WORD
WARNING

PHYSICAL HAZARDS
UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS
CAUSES EYE IRRITATION
MAY CAUSE ALLERGIC SKIN REACTION

PRECAUTIONARY MEASURES
HAZARDOUS POLYMERIZATION MAY OCCUR UPON DEPLETION OF INHIBITOR.
DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
WASH THOROUGHLY AFTER HANDLING.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET (MSDS).

13. SUPPLEMENT

NPCA – HMIS RATING

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>2</td>
</tr>
<tr>
<td>Personal protection**</td>
<td>D</td>
</tr>
</tbody>
</table>

**Respiratory protection may be necessary depending on conditions of use. Refer to Section 8 of this MSDS for respiratory protection guidelines.

REGULATORY INFORMATION

TSCA STATUS:
TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

CALIFORNIA PROPOSITION 65:
California Proposition 65 Information: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity.

INTERNATIONAL INVENTORY STATUS:

Australia (AICS): included on inventory
Canada (DSL): included on inventory
China: included on inventory
Europe (EINECS): NLP

Date Printed: 08-11-2006
This material contains an inhibitor (HQ, MEHQ, etc.) at <1%. The type and amount meet product specifications. Contact a company representative for exact concentrations and details on inhibitor level maintenance.

*Note - qualifiers and codes used in this MSDS
EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;
TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable
Information Found; N/DA = No Data Available

14. DISCLAIMERS
Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).