

AV ACTIVATOR

1. Product And Company Identification

Supplier

Forbo Siegling, LLC
12201 Vanstory Dr.
Huntersville, NC 28078-8395

Company Contact: Mr. Jay Leighton
Telephone Number: 704-948-0800

Supplier Emergency Contacts & Phone Number

CHEMTREC: (800) 424-9300

Issue Date: 02/01/2007

Product Name: AV ACTIVATOR

CAS Number: Not Avail.

Chemical Family: aromatic polyisocyanate

Chemical Formula: Mixture

MSDS Number: 780

2. Composition/Information On Ingredients

Ingredient Name	CAS Number		Percent Of Total Weight
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)	117-81-7		66.8
TOLUENE 2,4-DIISOCYANATE (POLYMER)	Not Establis		33.2
TOLUENE 2,4-DIISOCYANATE (FREE MONOMER)	584-84-9	<	0.1

EMERGENCY OVERVIEW

Harmful if inhaled or swallowed. CONTACT YOUR LOCAL POISON CONTROL CENTER IF SWALLOWED!
Contact with eyes or skin causes irritation. Water sensitive. May release harmful vapors or gases upon contact with water. Fire may produce irritating and poisonous gases.

Hazards Identification (Pictograms)



3. Hazards Identification

Eye Hazards

May cause eye and burns irritation upon contact, avoid contact with eyes.

Skin Hazards

Repeated prolonged contact may cause defatting of skin and dermatitis. Contact may cause reddening and irritation. Skin contact may cause allergic sensitization in certain individuals, with resultant allergic dermatitis.

Ingestion Hazards

May cause vomiting, headache, nausea, dizziness and irritation of mucous membranes.

Inhalation Hazards

Inhalation may cause upper respiratory irritation, headache, nausea dizziness in high concentrations. Vapors and mists may irritate eyes nose and throat. Symptoms include watering of the eyes, dryness of throat, coughing, headache tightness in chest or burning sensation.

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First Aid (Pictograms)



4. First Aid Measures

Eye

If contact occurs flush eyes with running water for 15 minutes; get medical attention.

Skin

Wash skin with soap and water. Moisturizing creams may be used as an aid to prevent drying & cracking of skin. Remove contaminated clothing/laundry before reuse.

Ingestion

CALL YOUR LOCAL POISON CONTROL CENTER IMMEDIATELY FOR ADVICE!

Keep victim calm. Administer CPR if necessary taking caution not to become contaminated while administering artificial respiration.

Inhalation

Remove victim from exposure to fresh air. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Note To Physician

Clinical signs of isocyanate exposure involved mucosal irritation of the respiratory and gastrointestinal tracts. Conjunctival irritation, skin inflammation (erythema, pain, vesiculation), and gastrointestinal disturbances (nausea, vomiting, abdominal pain) occur soon after exposure. Pulmonary symptoms include cough, burning, substernal pain, dyspnea, choking sensation, sputum production, and hoarseness. Prominent bronchospasm (eg. wheezing, rhonchi, dyspnea, cough) may be present. Neurologic symptoms include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression, and paranoia which may persist for several weeks. Persistent memory deficits, personality changes, irritability, and depression have been reported after severe exposures to TDI. Lacrimation, photophobia, profuse lid edema, and superficial corneal abrasion were the most common ophthalmologic effects at Bhopal.

SEE GENERAL POISONING: Prevention of absorption (oral ingestion): A) Emesis - DO NOT INDUCE VOMITING, CONTACT A PHYSICIAN. B) Lavage /PRC with tap water for children, saline for adults. C) Charcoal...many agents are absorbed on activated charcoal.../PRC 30 G in 3-4 ounces water for children, 100 G in 8-10 ounces of water for adults. D) Cathartics...dose: sodium or magnesium sulfate 250 mg/kg for children, orally; 20-30 g/dose to 100 G total adults Monitor patient for respiratory distress. REF (8) ANTR from Rumack Poison Indx ONLY EXPERIENCED PHYSICIANS SHOULD ATTEMPT THE ABOVE TREATMENTS. DO NOT INDUCE VOMITING! NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS VICTIM!

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: 383 °F 195 °C

Autoignition Point: 662 °F 350 °C

Fire And Explosion Hazards

The TDI may react with amines, alcohols, bases and warm water, possibly resulting in release of hazardous gases or vapors. Water or foam may cause frothing. This material is not compatible with strong oxidizing agents. Decomposition products may be toxic and personnel must be equipped with self contained breathing apparatus.

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5. Fire Fighting Measures - Continued

Extinguishing Media

Carbon dioxide, dry chemical, Halon. Avoid the use of water.

Fire Fighting Instructions

Always wear fire fighting protective gear and respiratory protection when fighting fires. During a fire highly irritating and toxic gases and smoke are present from decomposition/combustion products.

THE USE OF A SELF CONTAINED BREATHING APPARATUS IS MANDATORY TO PROTECT AGAINST INHALATION OF HIGHLY TOXIC COMBUSTION PRODUCTS!

6. Accidental Release Measures

Evacuate non-essential personnel, ventilate the area if possible. Clean-up personnel should be equipped with appropriate protective gear. Dike or contain the spill with absorbent material. Notify authorities if required. Cover spill area with absorbent material such as vermiculite, sawdust, Fuller's earth or other suitable material. Pour liquid decontaminant over spill area and allow to react for at least 10 minutes. Pick up or scoop up material and place into suitable container and cover LOOSELY, since pressure may build up in closed containers.

RECOMMENDED DECONTAMINATION SOLUTION: 50% water, 45% alcohol (ethyl, isopropyl) and 5% conc. ammonia. Use caution and protective equipment when applying solution. Heat will be given off.

NOTE: ALWAYS WEAR PROTECTIVE EQUIPMENT SUCH AS SELF CONTAINED BREATHING GEAR, GLOVES AND EYE PROTECTION WHEN HANDLING CONTAMINATED MATERIALS!

7. Handling And Storage

Handling And Storage Precautions

Store away from ignition sources. Keep containers closed when not in use. Store in a cool, dry, well ventilated, flammable liquid storage area. Store in separate area from amines, alcohols, bases and acids (oxidizers).

Storage Precautions

Store in a cool, dry, well ventilated location away from all possible ignition sources.

Work/Hygienic Practices

Smoking, drinking, eating food, drinking beverages, and the application of cosmetics should be prohibited prior to washing hands thoroughly after the use of this product.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

If large quantities are used, local exhaust ventilation should be used. Repeated prolonged exposure to vapors should be avoided.

If electrical equipment will be used in potentially flammable atmospheres, it must conform to NFPA and OSHA codes for Class I enclosures. Consult Article 500-505, NFPA/NEC electrical codes.

Eye/Face Protection

Use safety glasses, goggles or face shield to prevent accidental eye contact. Contact lenses should not be worn when working with this product.

Skin Protection

Nitrile or butyl rubber gloves may be used if repeated contact will occur. If working with large volumes, sanitary facilities used by the workers must include showers.

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8. Exposure Controls/Personal Protection - Continued

Respiratory Protection

Observe OSHA regulations for respiratory protective equipment, CFR 1910.134. If airborne levels are known to be below the PEL or TLV, an air purifying organic vapor respirator which has been proven to be effective against isocyanates in spray application environments, may be used. TDI lacks adequate warning properties necessary to use an air purifying respirator according to the joint OSHA/NIOSH RESPIRATOR DECISION LOGIC, if exposure levels are over the recommended limits an air supplied respirator is required.

Because pulmonary effects can be produced at very low levels in air, 2,4-toluene diisocyanate should only be used in areas with adequate general and local ventilation.

Respiratory protection should not be necessary under normal conditions of anticipated use in small quantities. However such decisions should be made by qualified professionals with knowledge of the working conditions.

Other/General Protection

Barrier creams may prove effective to prevent skin irritation.

Ingredient(s) - Exposure Limits

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)
 ACGIH TLV-TWA: 5 mg/m³ (A3)
 OSHA PEL-TWA: 5 mg/m³
 TOLUENE 2,4-DIISOCYANATE (POLYMER)
 No Exposure Limits Established by ACGIH or OSHA
 TOLUENE 2,4-DIISOCYANATE (FREE MONOMER)
 ACGIH TLV-TWA: 0.005 ppm (A4)
 ACGIH TLV-STEL: 0.02 ppm
 OSHA PEL-Ceiling: 0.02 ppm

9. Physical And Chemical Properties

Appearance

A transparent yellow liquid

Odor

A sharp, pungent, somewhat sweet odor

Chemical Type: Mixture

Physical State: Liquid

Boiling Point: 725 °F 385 °C

Specific Gravity: 1.07

Percent Volatiles: 33.3

Vapor Pressure: 0 mm Hg @ 20C

Solubility: Insoluble (reacts)

10. Stability And Reactivity

Stability: Stable

Hazardous Polymerization: May Occur

Conditions To Avoid (Stability)

Avoid contact with strong oxidizers, amines, alcohols, water and bases.

Incompatible Materials

Reacts readily and violently with compounds containing active hydrogens, amines, alcohols, acids, bases, water and strong oxidizers causing uncontrolled polymerization, rapid evolution of heat, foam, spatter and explosion hazard. Liquid reacts with water forming carbon dioxide.

Hazardous Decomposition Products

Toxic oxides of nitrogen, hydrogen cyanide, and organic crack products are produced during combustion.

AV ACTIVATOR**10. Stability And Reactivity - Continued****Conditions To Avoid (Polymerization)**

Contact with concentrated alkaline compounds such as sodium hydroxide or tert-amine may cause run-away reaction

11. Toxicological Information**Acute Studies**

The following are studies of effects of Toluene 2,4-Diisocyanate (TDI):

An accidental splash in the eyes of workmen has caused keratitis and conjunctivitis. One case describes "unusual amount of photophobia and blepharospasm." Another case described involved severe iridocyclitis and secondary glaucoma.

Workers have complained of neurological symptoms after single exposure to difficulty in concentration, poor memory and confusion within three weeks of exposure. Four years after exposure, personality changes, irritability, or depression was still noted.

Firemen exposed to fumes of TDI experienced symptoms during and after the fire. Symptoms were mainly gastrointestinal, respiratory, or neurological. Gastrointestinal symptoms subsided within two days of onset. Some firemen sustained long-term respiratory tract damage.

Patients with TDI induced asthma continued to be symptomatic months and even years after cessation of TDI exposure. It is thought that TDI may cause the airways to become hyperactive to many agents such as smoke and other air pollutants.

One study suggests that patients exposed to TDI may occasionally develop a hypersensitivity pneumonitis rather than the more usual asthmatic syndrome.

Some workers become exceedingly sensitive to TDI vapors and respond dramatically to minute amounts in the air.

TDI may produce a true hemorrhagic syndrome affecting the bone marrow and producing primarily thrombocyte series suppression.

Neurological symptoms were reported in 23 firemen heavily exposed to TDI during a manufacturing plant fire. Symptoms included euphoria, ataxia, and loss of consciousness with long lasting mild subjective symptoms of personality change, irritability, depression, and memory difficulties.

Several studies on the prognosis of TDI induced asthma show that a significant proportion of patients continue to experience asthmatic symptoms and nonspecific bronchial hyperresponsiveness after the cessation of work, and that further exposure in sensitized subjects leads almost invariably to persistence of respiratory symptoms and of bronchial hyperresponsiveness and the deterioration of airway function. Specific bronchial reactivity may change after cessation of work; however, some subjects continue to be sensitive to TDI several months after cessation of work.

Eye Effects

TDI monomer is a severe irritant. Avoid contact with eyes at all times. Can also cause conjunctivitis and corneal opacities.

Irritant Dose Rabbits Ocular: 100 mg, severe eye irritation. (TDI)

Skin Effects

Di(2-ethylhexyl)phthalate is a central nervous system depressant if absorbed.

TDI causes skin irritation and blistering.

Irritant Dose Rabbits Dermal: 500 mg/24hr. moderate skin irritation (TDI)

Acute Oral Effects

LD50 (RAT)-oral: 5800 mg/kg (TDI); LD50 (RAT)-oral: 26g/kg (DEHP)

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11. Toxicological Information - Continued

Acute Inhalation Effects

Allergic respiratory or skin reaction may occur in some individuals especially allergy prone individuals. Respiratory sensitivity results in asthma-like symptoms on subsequent exposure even below the TLV (TDI). Skin sensitivity results in allergic dermatitis which may include rash, itching, hives, and swelling of extremities.

Noncardiogenic pulmonary edema and bronchospasm can be produced at very low levels in air of TDI.

One scientific study of workers in a TDI manufacturing plant reported that certain workers exposed to high concentrations of TDI had larger declines in lung function (over the five year period of the study) than did other workers who experienced lower exposures to TDI. However, all of the workers in the study groups experienced exposure excursions above the 0.02 ppm exposure limits. However, the likelihood of experiencing these effects from the anticipated use of this product (in small quantities) is low.

Chronic/Carcinogenicity

Di(2-Ethylhexyl)phthalate is listed as an IARC Group 2B Carcinogen - A chemical, industrial process, or occupational exposure with sufficient evidence for carcinogenicity in animals, but inadequate data in humans. Di(2-Ethylhexyl)phthalate is listed on the National Toxicology Program (NTP) 8th Annual Report on Carcinogens.

Toluene 2,4-Diisocyanate is listed as an IARC Group 2B Carcinogen - A chemical, industrial process, or occupational exposure with sufficient evidence for carcinogenicity in animals, but inadequate data in humans. Toluene 2,4-Diisocyanate is listed on the National Toxicology Program (NTP) Annual Report on Carcinogens.

NOTE: The health effects of this product as noted above are based on extrapolations from the available data for the pure components. To the best of our knowledge, adverse health effects have not been determined for the final AV Activator product as a whole. Under the normal anticipated conditions of use of this product (in small quantities and for brief and intermittent exposures) it is believed that that the likelihood of experiencing adverse health effects is small.

Conditions Aggravated By Exposure

Asthmatic or individuals prone to allergy may be hypersusceptible to the effects of this product due to the TDI monomer present.

NOTICE TO PHYSICIAN: Medical supervision of all employees who handle or come into contact with this product is recommended. Medical surveillance should include preemployment and periodic medical examinations including pulmonary function tests. Persons with asthmatic-like conditions, chronic bronchitis or other respiratory diseases or recurrent eczema or sensitization should be excluded from working with isocyanates. Once an individual has been sensitized to an isocyanate, further exposure may result in a severe allergic reaction, and hence must not be permitted.

Ingredient(s) - Carcinogenicity

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)
NTP - Listed On The National Toxicology Program
TOLUENE 2,4-DIISOCYANATE (FREE MONOMER)
OSHA Regulated Carcinogen
NTP - Listed On The National Toxicology Program
Listed In The IARC Monographs

12. Ecological Information

Other Environmental Information

Water hazard class 1 (German regulation): slightly hazardous for water. Do not allow undiluted product or large quantities to reach ground waer, water course or sewage system.

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13. Disposal Considerations

Flash point is above 140°F. Spilled material should be disposed of as a toxic regulated hazardous waste. Use either incineration or solidification and disposal in an approved secure landfill. Consult all applicable disposal regulations before disposal.

RCRA Information

2,4-Toluene Diisocyanate is a RCRA hazardous waste U223 (40 CFR 261.33).

Di(2-ethylhexyl)phthalate is a RCRA hazardous waste U028 (40 CFR 261.33).

14. Transport Information

Proper Shipping Name

Toxic liquid, organic, n.o.s. (toluene diisocyanate)

Hazard Class

6.1 (PG III)

DOT Identification Number

UN2810

DOT Shipping Label

KEEP AWAY FROM FOOD

Packaging Exceptions

173.153

Packaging Requirements

173.203

Product shipped in glass bottles (5g or 15g) within expanded plastic boxes.

Germany: "ArbStoffV" danger symbol "Xn".

DOT (Pictograms)



TDG - Canada (Pictograms)



15. Regulatory Information

SARA Hazard Classes

Acute Health Hazard

Chronic Health Hazard

SARA Title III - Section 313 Supplier Notification

This product contains the following toxic chemicals that are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

DI(2-ETHYLHEXYL)PHTHALATE (DEHP) (117-81-7) 66.8 %

TOLUENE 2,4-DIISOCYANATE (FREE MONOMER) (584-84-9) <0.1 %

This information must be included on all MSDSs that are copied and distributed for this material.

Ingredient(s) - U.S. Regulatory Information

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

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15. Regulatory Information - Continued

Ingredient(s) - U.S. Regulatory Information - Continued

TOLUENE 2,4-DIISOCYANATE (FREE MONOMER)
SARA Title III - EPA Part 355 Extremely Hazardous Substance
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

State Regulations

"Universal" Labeling:

CONTENTS

Di(2-ethylhexyl)phthalate	117-81-7
Toluene 2,4-Diisocyanate (Polymer)	CAS unknown
Toluene 2,4-Diisocyanate (Monomer)	584-84-9

Ingredient(s) - State Regulations

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)

New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
New Jersey - Special Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Pennsylvania - Special Hazard
California - Proposition 65
Massachusetts - Hazardous Substance

TOLUENE 2,4-DIISOCYANATE (FREE MONOMER)

New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
Pennsylvania - Workplace Hazard
California - Proposition 65
Massachusetts - Hazardous Substance

Canadian Regulatory Information

Class D, Div 2 - Poisonous or Infectious Material: other toxic effects

European Union (EU) Regulatory Information

European Union Risk Phrases -
R21 - Harmful in contact with skin
R29 - Contact with water liberates toxic gas
R42/43 - May cause sensitization by inhalation and skin contact

European Union Safety Phrases -
S2 - Keep out of reach of children
S23 - Do not breathe gas/fumes/vapor/spray.
S24/25 - Avoid contact with skin and eyes
S30 - Never add water to this product

WHMIS - Canada (Pictograms)



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15. Regulatory Information - Continued

DSCL - Europe (Pictograms)



16. Other Information

NFPA Rating

Health: 0

Fire: 1

Reactivity: 0

HMIS Rating

Health: *2

Fire: 1

Reactivity: 1

Personal Protection: G

Revision/Preparer Information

This MSDS Supersedes A Previous MSDS Dated: 11/18/2003

Reference Documentation

Primary references used in the creation of this document:

- (1) Patty Indust. Hyg & Tox 3RD ED Vol 2A,2B,2C 1981-1982, p.2344-2345
- (2) Ibid. p. 4891-4894.
- (3) Handling Chemicals Safely 1980; 2nd ED, Dutch Assoc. of Safety Experts, the Dutch Chemical Industry Association and the Dutch Institute.
- (4) Guide to Occupational Exposure Values - 2006, ACGIH.
- (5) 29 CFR 1910 OSHA General industry standards 1910.1000 et.seq.
- (6) NFPA Fire Protection Guide for Hazardous Materials 325M 1978
- (7) 10th Annual Report on Carcinogens
- (8) National Library of Medicine Medlars online service; Hazardous Substances Data Bank HSN #'s 874 and 339.
- (9) Documentation Of The Threshold Limit Values And Biological Exposure Indices, 1996 ACGIH
- (10) Siegling Safety Data Sheet, 08/01/86, Hannover, Germany.
- (11) IARC Monographs Supplement 7

NOTE: Data marked with an asterisk (*) are for the primary component of this product

Other Information

Glossary -

ACGIH = American Conference of Governmental Industrial Hygienists

API = American Petroleum Institute

DOT = U.S. Department of Transportation

EPA = U.S. Environmental Protection Agency

IARC = International Agency For Research On Cancer

MSHA = Mine Safety and Health Administration

NFPA = National Fire Protection Association

NIOSH = National Institute of Occupational Safety and Health

NTP = National Toxicology Program

OSHA = U.S. Occupational Safety & Health Administration

PEL = Permissible Exposure Limit (OSHA)

REL = Recommended Exposure Limit (NIOSH)

STEL = Short-Term Exposure Limit

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16. Other Information - Continued

Other Information - Continued

TLV = Threshold Limit Value (ACGIH)

TWA = Time Weighted Average (8 hr.)

WHMIS = Canadian Workplace Hazardous Materials Information System

AP = approximately < = Less than > = Greater than

N/A = Not Applicable NE = Not Established ND = Not Determined

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

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