MATERIAL SAFETY DATA SHEET

SECTION 1 - MATERIAL IDENTIFICATION 100668

PRODUCT NAME	VERSATHANE* SME-80A URETHANE PREPOLYMER *VERSATHANE is a registered trademark of Air Products and Chemicals, Inc.
MSDS REVISION NUMBER	5
MANUFACTURER	Air Products and Chemicals, Inc. 7201 Hamilton Blvd., Allentown, PA 18195-1501
TELEPHONE NUMBER	800-345-3148
EMERGENCY TELEPHONE NUMBER(S)	800-523-9374 (Continental U.S.) 610-481-7711 (Outside Continental U.S.)
DATE PREPARED	SEPTEMBER 1999

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EMERGENCY OVERVIEW

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HMIS/NFPA HEALTH	2	FLAMMABILITY	1	REACTIVITY	1
PHYSICAL FORM	waxy solid				
at processing temperature	Liquid				
COLOR	White				
at processing temperature	Straw yellow / Amber				
ODOR	Pungent				
HAZARDS	Severe respiratory tract irritant. Moderate eye irritant. Moderate skin irritant. May cause respiratory sensitization. May cause skin sensitization.				
EXTINGUISHING MEDIA	Ignition will give rise to a Class B fire. In case of large fire use: alcohol foam. In case of small fire use: carbon dioxide (CO2), dry chemical, dry sand or limestone.				

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C.A.S. CHEMICAL NAME	Mixture
SYNONYMS	None
CHEMICAL FAMILY	Isocyanate Prepolymer
EMPIRICAL FORMULA	Mixture

INTENDED USE	Prepolymer
REVISION NOTES	Updated health hazard info AND SYMPTOMS OF EXPOSURE (Updated Reactivity Informa respiratory protection inf

SECTION 2 - INGREDIENTS

#	%	CAS Number and Chemical Name
1.	89.00 - 94.00	9048-58-2 MDI/PTMEG POLYMER
2.	6.00 - 11.00	101-68-8 BENZENE, 1,1'-METHYLENEBIS(4-I

OSHA (ACGIH) EXPOSURE LIMITS

		TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3	CEI ppm
1.	OSHA	N/E	N/E	N/E	N/E	N/E
	ACGIH	N/E	N/E	N/E	N/E	N/E
2.	OSHA	N/E	N/E	N/E	N/E	0.0
	ACGIH	0.0050	0.0510	N/E	N/E	N/E

N/E = Not Established.

SECTION 3 - HEALTH HAZARDS

ROUTES OF EXPOSURE

Eye Contact
Skin Contact
Ingestion

EXPOSURE STANDARDS

See Section 2 for exposure standards on ingredient
contaminant concentrations in the workplace at the
feasible levels.

HEALTH HAZARDS

Severe respiratory tract irritant.
Moderate eye irritant.
Moderate skin irritant.
May cause respiratory sensitization.
May cause skin sensitization.

Skin
Respiratory system

IGNS AND SYMPTOMS OF EXPOSURE (Acute effects)
Inhalation of mists may cause irritation in the respiratory tract. Inhalation of vapors may cause irritation in the respiratory tract. Contact with the skin or eyes causes moder eye and skin irritation, redness and discomfort which is transient. Coughing and chest pain may result.

IGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)
This substance may cause respiratory sensitization and chroni lung toxicity to exposed workers.
Repeated and/or prolonged exposure may cause allergic reaction/sensitization.
Repeated and/or prolonged exposures may result in: adverse respiratory effects (such as cough, tightness of chest or shortness of breath), adverse eye effects (such as conjunctiv or corneal damage), adverse skin effects (such as rash, irritation or corrosion).

DICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
Asthma
Chronic respiratory disease (e.g. Bronchitis, Emphysema)
Eye disease
Skin disorders and Allergies

RCINOGENS UNDER OSHA, ACGIH, NTP, IARC, OTHER
This product contains no carcinogens in concentrations of 0.1 percent or greater.

CTION 4 - FIRST AID

E CONTACT
Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Seek medical advice.

IN CONTACT
Remove product and immediately flush affected area with water at least 15 minutes. Remove contaminated clothing and shoes. medical advice.

HALATION
Move patient to fresh air. If breathing has stopped or is lab give assisted respiration (e.g. mouth-to-mouth). Supplementa oxygen may be indicated. Prevent aspiration of vomit. Turn victim's head to the side. Seek medical advice.

GESTION
If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as direct by medical personnel. Never give anything by mouth to an

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TION 5 - FIRE AND EXPLOSION DATA

SH POINT (closed cup) >110.00 C (>230.00 F)

ER EXPLOSION LIMIT (UEL) No Data
ER EXPLOSION LIMIT (LEL) No Data

DIGNITION TEMPERATURE No Data
: HAZARD CLASSIFICATION (OSHA/NFPA)
Class IIIB

NGUISHING MEDIA
gnition will give rise to a Class B fire. Do not add wate
ther liquids to this product. In case of large fire use:
oam. In case of small fire use: carbon dioxide (CO2), dry
hemical, dry sand or limestone.

IAL FIRE FIGHTING PROCEDURES
irefighters should wear butyl rubber boots, gloves, and b
uit and a self-contained breathing apparatus.
Retain expended liquids from fire fighting for later disp

UAL FIRE AND EXPLOSION HAZARDS
ay generate toxic or irritating combustion products.
Sudden reaction and fire may result if product is mixed w
xidizing agent.
May generate carbon monoxide gas. May generate hydrogen c
as.
Personnel in vicinity and downwind should be evacuated.

ION 6 - ACCIDENTAL RELEASE MEASURES

AINMENT TECHNIQUES (Removal of ignition sources, diking e
top the leak, if possible. Shut off or remove all ignitic
ources. Construct a dike to prevent spreading (includes m
iquids until they freeze).

N-UP PROCEDURES
f recovery is not feasible, admix with dry soil, sand or
on-reactive absorbent and place in an appropriate chemica
ontainer. Transfer to containers by suction, preparatory
ater disposal. Place in metal containers for recovery or
isposal. Clean-up personnel must be equipped with self co
reathing apparatus and butyl rubber protective clothing.
arge spills, recover spilled material with a vacuum truck
repare a decontamination solution of 0.2-5% liquid deterg
-8% concentrated ammonium hydroxide in water. Treat spil
ith decontamination solution, using about 10 parts of the
olution for each part of the spill and allow it to react

10 minutes for trace amounts and 48 hours for large spills.
alize the waste. Carbon dioxide will evolve, leaving
ole polyureas. Insulated gloves such as thermal lined
when handling hot material.

RGENCY ADVICE
rotective clothing, boots, gloves, and eye protection.

- HANDLING AND STORAGE

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way from: oxidizers, moisture. Keep in cool, dry,
ated storage and in closed containers. Store under inert
here. Store under a nitrogen atmosphere.

ontact with skin or eyes. Avoid breathing of vapors.
in well ventilated work space. Handle under inert gas
here in dry equipment. Maintain a nitrogen atmosphere in
ad space of the drum. Do not use air pressure to remove
s. When handling, do not eat, drink, or smoke. Avoid using
spray application without strict conformance to all
able electrical codes and the OSHA limit for maximum
le airborne concentrations. To prepare for unloading, the
th bung vent inserted should be placed in a warm room,
rmer or meltdown oven for period of time sufficient to
e desired amount of prepolymer. Liquid prepolymer can then
ved from the drum by inserting a drum spigot or ball valve
2 inch bung, positioning on a drum tilter, tilting and
out the required amount.

AUTIONS
cy showers and eye wash stations should be readily
ble. Adhere to work practice rules established by
ent regulations (e.g. OSHA).

- PERSONAL PROTECTION / EXPOSURE CONTROLS

TION
proof eye goggles. In emergency situations, use eye
with a full face shield. Full face shield with goggles
ath when molten material is being handled.

CTION
able gloves. Polyvinyl alcohol gloves. Insulated gloves
thermal lined rubber when handling hot material.

Y PROTECTION
uired under normal conditions in a well-ventilated
ce. Under the following conditions a respirator may be

required: when product vapor concentration exceeds the limits listed in section 2, during repair and cleaning of equipment, during transfer or discharge of the product, sampling, spray applications. Types of respirators that may be used include th following: Chemical Cartridge Respirator with face piece to protect against the organic vapor, Supplied air respirator wit full face piece, Self-contained breathing apparatus in pressur demand mode. In emergency conditions use a self-contained breathing apparatus in pressure demand mode.

ROTECTIVE CLOTHING
Long sleeved clothing.

NGINEERING CONTROLS
Maintain air concentrations in work spaces in accord with standards outlined in Sections 2 and 3.

ORK AND HYGIENIC PRACTICES
Provide readily accessible eye wash stations and safety showe Wash at the end of each workshift and before eating, smoking o using the toilet.

ECTION 9 - TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

HYSICAL FORM	waxy solid
OLOR	White
DOR	Pungent
H	No Data
APOR PRESSURE (mm Hg at 21C (70F))	<1.00000
APOR DENSITY (Air = 1)	No Data
OILING POINT	>149.00 C (>300.20 F
ELTING POINT	No Data
OLUBILITY IN WATER	Reacts with water
PECIFIC GRAVITY (Water = 1)	1.08
OLECULAR WEIGHT	Mixture

ECTION 10 - STABILITY AND REACTIVITY

HEMICAL STABILITY
Stable

ONDITIONS TO AVOID (if unstable)
Not applicable

NCOMPATIBILITY (Materials to Avoid)
Oxidizing Agents (i.e. perchlorates, nitrates etc.). Sodium o Calcium Hypochlorite. Alcohols. Reaction with peroxides may result in violent decomposition of peroxide possibly creating explosion. Product reacts slowly with water which results in liberation of carbon dioxide.

COMPOSITION PRODUCTS (from burning, heating, or reaction
aterials).
noxide in a fire. Carbon Dioxide in a fire. Irritating
fumes at elevated temperatures. nitriles. cyanic acid.
es. cyanogens. amides. carbamates. toxic cyanates.

LYMERIZATION
occur

) AVOID (if polymerization may occur)
cable

TOXICOLOGICAL PROPERTIES

OXICITY (LD50, RAT)
ng/kg (No deaths) (Estimate)

TOXICITY (LD50, RABBIT)
ng/kg (No deaths) (Estimate)

TION TOXICITY (LC50, RAT)
g/L / 4 hr (No deaths)

EFFECTS

FECTS DATA
1 data based on estimates.

IRONIC DATA
l, subchronic or chronic test data are known.

ECOLOGICAL INFORMATION

DISPOSAL CONSIDERATIONS

L
h all Federal, State and Local Regulations.

TRANSPORT INFORMATION

SHIPPING NAME Chemicals, N.O.I. - Not DOT Regulated

PING NAME Refer to Bill of Lading.

IMO SHIPPING DATA — Refer to Bill of Lading.
ICAO/IATA SHIPPING DATA — Chemicals, N.O.I. - Not IATA Regulated

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SECTION 15 - REGULATORY INFORMATION

US FEDERAL REGULATIONS

TOXIC SUBSTANCES CONTROL ACT (TSCA)-
All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)
Irritant. Sensitizer.

EPA SARA Title III Section 312 (40CFR370) hazard class
Immediate Health Hazard. Delayed Health Hazard.

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are
BENZENE, 1,1'-METHYLENEBIS(4-ISOCYANTO-

STATE REGULATIONS

PROPOSITION 65 SUBSTANCES (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986")
None

NEW JERSEY TRADE SECRET REGISTRY NUMBER(S)
None

SECTION 16 - INTERNATIONAL REGULATIONS

CANADA

DSL
Included on Inventory.

WHMIS HAZARD CLASSIFICATION
Class D Division 2A, Class D Division 2B,

WHMIS TRADE SECRET REGISTRY NUMBER(S)
None

WHMIS SYMBOLS
Stylized T,

EUROPEAN ECONOMIC COMMUNITY (EEC)

EINECS/ELINCS MASTER INVENTORY
Included on Inventory.

EEC SYMBOL
HARMFUL (Xn)

EEC RISK (R) PHRASES

May cause sensitization by inhalation (R42). Irritati
eyes, respiratory system and skin (R36/37/38).

EEC SAFETY PHRASES

In case of contact with eyes, rinse immediately with
plenty of water and seek medical advice (S26). After
contact with skin, wash immediately with plenty of so
and water (S28). In case of insufficient ventilation
wear suitable respiratory equipment (S38). In case o
accident or if you feel unwell, seek medical advice
immediately (show the label where possible) (S45).

EEC SPECIAL PHRASES

Contains Isocyanates. See information supplied by th
manufacturer.

AUSTRALIA

AICS

Included on Inventory.

PRODUCT CODE SME80A

END OF DOCUMENT