SHIPLEY
A ROHM AND HAAS COMPANY

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

SVC-14 Positive Resist Stripper

Revision date: 08/14/2002

Supplier

Shipley Company
455 Forest Street
Marlborough, MA 01752

For non-emergency information contact: 508-481-7950

Emergency telephone number

Chemtrec	800-424-9300
Shipley emergency	508-481-7950

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	W/W
Dimethyl sulfoxide	67-68-5	< 60.0 %
Cyclic ester		> 40.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Color	clear
Odor	Mild Organic

Hazard Summary	CAUTION!
	Combustible liquid and vapor. Causes irritation to eyes, nose, and respiratory tract. Prolonged, repeated contact, inhalation, ingestion, or absorption through the skin, may cause toxic effects to internal organ systems.

Potential Health Effects
Primary Routes of Entry: Inhalation, ingestion, eye and skin contact, absorption.

Eyes: May cause pain, transient irritation and superficial corneal effects.

Skin: Material may cause irritation.

Prolonged or repeated exposure may have the following effects:
- central nervous system depression
- drowsiness
- defatting of skin leading to irritation and dermatitis
- liver damage
- kidney damage

Ingestion: Swallowing may have the following effects:
- irritation of mouth, throat and digestive tract
- headache
- nausea
- vomiting

Repeated doses may have the following effects:
- central nervous system depression
- liver damage
- kidney damage

Inhalation: Inhalation may have the following effects:
- irritation of nose, throat and respiratory tract

Higher concentrations may have the following effects:
- systemic effects similar to those resulting from ingestion

Target Organs: - Skin
- Eye
- Respiratory System
- nervous system
- liver
- kidney

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash out eye with plenty of water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting. Obtain medical attention immediately Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point ca.91 °C (196 °F)

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide.
Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Pressure may build up in closed containers with possible liberation of combustible vapors.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear appropriate protective clothing.
Wear respiratory protection.
Eliminate all sources of ignition.

Environmental precautions
Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up
Contain and absorb using earth, sand or other inert material.
Transfer into suitable containers for recovery or disposal.
Finally flush area with plenty of water.

7. HANDLING AND STORAGE

Handling
Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.
Further information on storage conditions: Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

Storage
Storage conditions: Store in original containers. Store away from sources of heat or ignition.
Storage area should be: - cool - dry - well ventilated - out of direct sunlight

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit values

Component	Regulation	Type of listing	Value
Dimethyl sulfoxide	Rohm and Haas	TWA	30 ppm
	Rohm and Haas	STEL	45 ppm
	Rohm and Haas	Absorbed via skin	

Eye protection: Chemical goggles.

Hand protection: Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	liquid
Color	clear
Odor	Mild Organic
pH	neutral
Boiling point/range	ca.197 °C (387 °F)
Flash point	ca.91 °C (196 °F)
Component: **Dimethyl sulfoxide**	
Vapor pressure	0.4 mmHg at 20 °C
Component: **Cyclic ester**	
Vapor pressure	0.1 mmHg at 20 °C
Relative vapor density	Heavier than air.
Water solubility	completely soluble
Relative density	1.11
Evaporation rate	Slower than ether
VOC's	1,110 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions.
Conditions to avoid	- contact with incompatible materials
Materials to avoid	- Strong oxidizers - Alkaline metals - Acid chlorides
Hazardous decomposition products	- Formaldehyde, - dimethyl disulfide, - carbon monoxide, - carbon dioxide, - sulfur dioxide, - oxides of sulfur, - mercaptans,

Polymerization Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Dimethyl sulfoxide**
Acute oral toxicity LD50 rat 14,500 - 28,300 mg/kg

Component: **Cyclic ester**
Acute oral toxicity LD50 rat 1,540 mg/kg

Component: **Dimethyl sulfoxide**
Acute dermal toxicity LD50 rat 40,000 mg/kg

Component: **Cyclic ester**
Acute dermal toxicity LD50 rat >5,000 mg/kg

Component: **Dimethyl sulfoxide**
Skin irritation A single application to rabbit skin produced minimal irritation.

Component: **Cyclic ester**
Skin irritation A single application to rabbit skin produced no irritation.

Component: **Dimethyl sulfoxide**
Eye irritation Single application to the rabbit eye produced conjunctival irritation.

Component: **Cyclic ester**
Eye irritation Single application to the rabbit eye produced severe conjunctival irritation.

Component: **Dimethyl sulfoxide**
Subchronic toxicity Substance has been reported to have shown no evidence of skin sensitising potential when tested by the following procedures:
- Kligman maximisation test
Oral study (13 weeks, rat): LOEL = 8800 mg/kg/day (minor target organ effects: liver) (reduced body weight gain): NOEL = 1100 mg/kg/day

Component: **Dimethyl sulfoxide**
Toxicity to reproduction
Developmental effects were seen in laboratory animals only at oral dose levels that were maternally toxic (11,000 mg/kg).

Component: **Dimethyl sulfoxide**
Mutagenicity
No significant mutagenic response was observed and the carcinogenic potential of the material is therefore considered to be low.
Component: **Cyclic ester**

Subchronic toxicity	No mortality was observed with exposure to saturated atmosphere: - rats Substance has shown no evidence of skin sensitization potential. No evidence of carcinogenicity was seen in the following species: - mice - oral - dermal

Component: **Cyclic ester**
Toxicity to reproduction
Studies in laboratory animals have shown no teratogenic effects.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Dimethyl sulfoxide

Ecotoxicity effects	
Toxicity to fish	LC50 Rainbow trout (Oncorhynchus mykiss) 96 h 33,000 mg/l
Toxicity to algae	EC50 Marine algae (Skeletonema costatum) 96 h 12,350 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia 24 h 7,000 mg/l

Cyclic ester

Ecotoxicity effects	
Toxicity to fish	LC50 Fathead minnow (Pimephales promelas) 48 h 100 - 500 mg/l
Toxicity to algae	EC50 scenedesmus subspicatus 96 h 79 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia 48 h >500 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal

Dispose of in accordance with all applicable local and national regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Labels should not be removed from containers until they have been cleaned. Empty containers may contain hazardous residues. Dispose of containers with care.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

IMO/IMDG

Not regulated (Not dangerous for transport)

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate, delayed, flammability hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):
U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
This product does not contain any substances subject to Section 12(b) export notification.

US. Toxic Substances Control Act (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	2	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Version: 1.00
Print Date: 01/06/2003
Layout 306128