

**MATERIAL SAFETY
DATA SHEET
UI-9900**

**PREFORMED LINE PRODUCTS
URETHANE DIVISION
1700 Woodhurst Lane
Albemarle, North Carolina 28001
704-983-6161**

Emergency Phone Number: Chemtrec 800-424-9300 (within the USA), 202-483-7616 (outside of the USA.) Call only in the event of a chemical emergency involving spill, leak, fire exposure, or accident involving chemicals.

SECTION 1 - CHEMICAL PRODUCT

PRODUCT NAME: UI-9900
PRODUCT USE/CLASS: Release Agent
REVISED: 12/27/04

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

2.1 Chemical characterization (preparation):

Chemical characteristics

Polydimethylsiloxane with functional groups

2.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
INHA	67923-07-3	amino functional polydimethyl siloxane	>=5.0	<=10.0	
VERU	556-67-2	Octamethyl cyclotetrasiloxane	>=0.1	<=1.0	R

Type: HYD- by product upon hydrolysis, INHA – ingredient, NEBE – by product, MONO – residual monomer, VERU –impurity, VUL- by product upon vulcanization. ***Note: C1 – IARC carcinogen, C2- NTP carcinogen, C3- OSHA carcinogen, NH – non hazardous, R-reproductive toxin.

Substances listed in the subsections HAPS and California Proposition 65 Carcinogens/Reproductive Toxins that are not listed in section 2 are only present at quantities below 0.1% or they are inextricably bound in the product.

SECTION 3 - HAZARDS IDENTIFICATION

3.1 Hazards classifications

HMIS rating (product as packaged)

Health: 2 Fire: 1 Reactivity: 0 PPE: G

Note: Respiratory protection is only recommended in the event that ventilation or engineering controls are unable to maintain exposures below recommended levels; or in the event of a spill or other emergency response situation. (HMIS codes are based on contact with the product as packaged and any hydrolysis by-products, if present.) Hazardous Materials Identification System and HMIS are registered trademarks of the National Paint and Coatings Association.

Canadian WHMIS Classification: D2A, D2B

3.2 Emergency overview and potential hazards

Signal word:

WARNING

Physical hazards:

No known physical hazards

Acute health effects

Route of entry or possible contact:

Eyes, skin, inhalation (aerosol)

Eye Contact:

Causes eye irritation

Skin Contact:

Causes skin irritation

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Inhalation:

May cause lung damage if inhaled as an aerosol. Aerosol exposure may be hazardous to health based on animal studies. Inhalation caused reproductive effects in animals. See Sect. 3.3 "Chronic health effects."

Mucous membrane contact:

No known mucous membrane hazards.

Ingestion:

Small amounts of the liquid aspirated into the respiratory tract during ingestion or vomiting may cause damage to lungs.

Additional information on acute health effects:

Depending on method of application/use, exposure to hazardous ingredients may be possible. This hazard evaluation is based in part on toxicological testing of the material. This material can enter the lungs during swallowing or vomiting & cause lung inflammation and/or damage (aspiration hazard).

3.3

Further information:

Chronic health effects

Prolonged or repeated inhalation of vapors may have adverse effects on the reproductive system, based on animal testing of a component of this material.

Medical conditions which may be aggravated by exposure:

Overexposure may cause or aggravate pre-existing lung conditions and diseases such as asthma, emphysema, silicosis, or cancer.

Target organs affected:

Lungs – Liver and female reproductive system

Signs and symptoms of exposure:

Refer to Acute Health effects, listed above.

Carcinogens/Reproductive toxins:

Based on animal tests, This material contains between 0.1% and 1% of a known reproductive toxin. This material contains >=0.1% of a substance which may cause cancer. However, the relevance to human has not been determined.

See Section 11 for Toxicological Information, if any.

4 First-aid measures

4.1

General information:

Get medical attention if irritation occurs or if breathing becomes difficult. Remove contaminated clothing and shoes.

4.2

After inhalation

If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.

4.3

After contact with the skin:

If contact with skin, immediately flush skin with plenty of water for at least 15 min.

4.4

After contact with eyes:

If contact with eyes, Immediately hold eyelids apart and flush with plenty of water for at least 15 min.

4.5

After swallowing:

For ingestion, if conscious, give several glasses of water but do not induce vomiting. If vomiting does occur, give additional fluids. Danger of aspiration.

4.6

Advice for the physician:

Treat symptomatically

5 Fire-fighting measures

5.1

Flammable properties:

Flash Point	138°C (280°F)
Boiling Point/boiling range	not determined
Lower explosion limit (LEL)	not determined
Upper explosion limit (UEL)	not determined
Ignition temperature	not determined
NFPA Hazard Class (comb./flam. Liquid)	IIIB

5.2

Fire and explosion hazards:

Material supports combustion. This material does not present any unusual fire or explosion hazards.

5.3

Recommended extinguishing media:

Dry chemical. Carbon dioxide. AFFF alcohol compatible foam. Water-use fine spray or fog.

5.4

Unsuitable extinguishing media:

None.

5.5

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:

Hazardous decomposition products: carbon dioxide, carbon monoxide, formaldehyde, silicon dioxide, nitrogen oxides and incompletely burnt hydrocarbons.

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- 5.6 Fire fighting procedures:**
Fire fighters should wear full protective clothing including a self-contained breathing apparatus. Cool endangered containers with water.

6 Accidental release measures

- 6.1 Precautions:**
Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Avoid inhaling mists and vapors. If material is released indicate risk of slipping.
HAZWOPER PPE Level: C
- 6.2 Containment:**
Prevent material from entering surface waters, drains or sewers and open soil. Contain any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers. Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.
- 6.3 Methods for cleaning up:**
Do not flush away with water. For small amounts: Absorb with a liquid binding material such as diatomaceous earth and dispose of according to local/state/federal regulations. Contain larger amounts and pump up into suitable containers. Clean any slippery coating that remains using a detergent/soap solution or another biodegradable cleaner. Exhaust vapors.
- 6.4 Further Information:**
Eliminate all sources of ignition.

7 Handling and storage

- 7.1 Handling**
Precautions for safe handling:
Avoid formation of aerosols. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection). Ensure adequate ventilation. Keep away from incompatible substances in accordance with section 10.2. Spilled substance increases risk of slipping.
Precautions against fire and explosion:
Product can separate methanol. Vapors may form in closed rooms with air mixtures, leading to explosion in the presence of sources of ignition, even in empty, uncleaned vessels. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.
- 7.2 Storage**
Conditions for storage rooms and vessels:
None known
Advice for storage of incompatible materials:
Avoid contact with acids.
Further information for storage:
Protect against moisture. Keep container tightly closed and store in a cool, well ventilated place.

8 Exposure controls and personal protection

- 8.1 Engineering controls**
Ventilation:
General ventilation sufficient to provide 1 CFM per square foot of floor area or 6 room air exchanges per hour is recommended.
Local exhaust:
If spraying or other aerosol generating operations are performed, local exhaust ventilation designed to capture mists and sprays, such as a paint spray booth, is recommended.
- 8.2 Associate substances with specific control parameters such as limit values**
Further information:
Maximum concentration at workplace recommended by producer: octamethylcyclotetrasiloxane (D4, CAS no. 556-67-2) = 10ppm (123 mg/m³)
- 8.3 Personal protection equipment (PPE)**
Respiratory protection:
If spraying or other operations which generate an aerosol mist are conducted, respiratory protection for exposed personnel is recommended. A NIOSH approved air purifying respirator equipped with universal multi-contaminant, multi-gas/vapor cartridges and at least P-99 solid/ aerosol particulate filters is recommended if overexposure to dusts, mists, or vapors could occur. If eye-irritating dusts or vapors are present, a full-face respirator should be worn.

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Hand Protection:

Butyl rubber protective gloves

Eye Protection:

Safety glasses with side shields. Additional eye and face protection, splash-proof goggles, hood, full-faced respirator, or face shield is recommended if splashing could occur.

Other protective clothing or equipment:

Provide eye bath and safety shower. Additional skin protection, such as SARANEX coated Tyvek apron, over-sleeves, lab coat, coveralls, or protective suit should be worn if splashing could occur.

8.4 General hygiene and protection measures

Avoid contact with eyes, skin and clothing. Avoid breathing dust/vapor/mist/gas/aerosol. Wash thoroughly after handling.

9 Physical and Chemical Properties	
9.1 Appearance	
Physical state / form	: liquid
Color	: Clear
Odor	: weak, fishy, Garlic, Onion
9.2 Safety parameters	
Melting point / melting range	: not determined
Boiling point / boiling range	: not determined
Flash Point	: 138°C (280°F) Method: (ASTM D93)
Ignition Temperature	: not determined
Lower explosion limit (LEL)	: not determined
Upper explosion limit (UEL)	: not determined
Vapor pressure	: 0.177318 hPa
Density	: 0.968 g/cm ³
Water solubility/miscibility	: insoluble
pH-value	: not determined
Viscosity (dynamic)	: not determined
9.3 Further information	
Percent volatiles	: < 1%
VOC	: 0.648 g/l Method: (calculated value)
VOC released during cure	: 19.4 g/l Method: (estimated value)

10 Stability and reactivity	
10.0 General information:	Stable under normal conditions of use
10.1 conditions to avoid:	although this product is not expected to react with commonly used materials of construction and process equipment, it is advised that any rubber or plastic items such as hoses and gaskets be tested prior to large scale processing to ensure there is no degradation of performance or durability.
10.2 Materials to avoid:	Relatively non-reactive
10.3 Hazardous decomposition products:	Methanol is released upon contact with water. (in small amounts) Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150°C (302°F) through oxidation.
10.4 Further information:	Hazardous polymerization cannot occur.

11 Toxicological information			
11.1 General information:	Toxicological testing has been conducted with this material.		
11.2 Toxicological data:	Acute toxicity (LD50/LC50- values relevant to classification):		
Exposition	Value/value range	species	source
Oral	> 34600 mg/kg	rat	
Dermal	> 10200 mg/kg	rabbit	
By inhalation	> 1.9 mg/1/4h (spray/dust)	rat	test report

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Primary irritation

Exposition	effect	species/test system	source
To skin	mildly irritating	rabbit	
To eyes	mildly irritating	rabbit	

Sensitization

Exposition	effect	test method	species	source
To skin	not sensitizing	skin sensitization	guinea-pig	

Reference points for mutagenic (carcinogenic) potential:

Test system	effect	source
Bacterial reverse mutation test	not mutagenic	

Additional information/remarks:

Oral toxicity: Large oral doses (1600 mg/day for 14 days) of OMCTS/D4 caused an increase in the number of liver cells (hyperplasia) in laboratory rats. Ingestion of OMSTS/D4 is not expected in industrial use. Ingestion of methanol or methanol releasing compounds may result in delayed damage to the optic nerves, causing permanent blindness, and if untreated may cause other potentially fatal toxic effects.

Inhalation toxicity: Two groups of five male and five female albino Sprague rats were exposed for 4 hours, using whole-body exposure methods to aerosol concentrations of 1.2 and 1.9 mg/l of Release Agent E155 (an amino-functional siloxane material). The maximum obtainable concentration was 1.9 mg/l. The 4-hour LC50 was considered to be greater than 1.9 mg/l. If concentration higher than 1.9mg/l could be generated and extrapolated upward from the two available data points, the 4-hour LC50 would be approximately 4 mg/l. No deaths occurred during testing at this exposure level. Since there were no mortalities, an LD50 cannot be assigned, but it would have to be greater than the tested exposure.

Toxicity to reproduction/fertility: in a female rat gender-specific range finding study (inhalation exposure) with octamethylcyclotetrasiloxane (OMCTS/D4), decreases in mean liver litter size and in the number of implantation sites were seen at the 700 ppm exposure level. In a two generation reproductive study with rats, decreased mean live litter size and prolonged labor (dystocia) were observed at the 500 and 700 ppm exposure levels. These same effects were not seen at the lower dose levels of 70 and 300 ppm. Previous inhalation developmental studies did not show birth defects at doses ranging up to 700 ppm in rats and 500 ppm in rabbits. The significance of these effects in humans can not be determined at this time. However, because these effects are only seen at very high exposure levels, it is unlikely that industrial, commercial and consumer uses of products containing OMCTS/D4 would result in a significant risk to humans. In a two generation reproductive study via inhalation with OMCTS/D4 in rats, decreased mean live litter size and prolonged labor (dystocia) were observed at the 500 ppm and 700 ppm exposure levels. These same effects were not seen at the lower dose levels of 70 ppm and 300 ppm. Previous inhalation developmental studies did not show birth defects at doses ranging up to 700 ppm in rats and 500 ppm in rabbits. Because these effects are only seen at very high exposure levels, it is unlikely that industrial, commercial and/or consumer uses of products containing OMCTS/D4 would result in a significant risk to humans.

Chronic toxicity / carcinogenicity: In a two year combined chronic toxicity and carcinogenicity inhalation study with octamethylcyclotetrasiloxane (OMCTS/D4) in rats, and increased incidence of (uterine) endometrial cell hyperplasia and endometrial adenomas were observed at the highest exposure level of 700 ppm in female rats. These same effects were not seen at the other dose levels of 10, 30 and 150 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing OMCTS/D4 would result in a significant risk to humans.

Additional information / remarks:

Inhalation toxicity: In a 90-day subchronic inhalation study with OMCTS/D4, female rats at the highest dose level of 300 ppm showed a reversible increase in liver and ovary weights. Rats exposed to inhalation concentrations of 5 ppm and 10 ppm, which are more typical of industrial exposure, did not show any toxic effects. Further studies in laboratory guinea pigs and rabbits have shown no liver effects due to D4 inhalation exposure. In a female rat gender-specific range finding study (inhalation exposure) with OMCTS/D4 decreases in mean live litter size and in the number of implantation sites were seen at the 700 ppm exposure level.

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12 Ecological information

- 12.1 **Information on elimination (persistence and degradability)**
Biodegradation / further information:
Biologically not degradable.
Further Information:
Elimination by absorption in activated sludge.
- 12.2 **Behavior in environmental compartments**
Mobility
Absorbed by floating particles. Separation by sedimentation.
Further information:
Bioaccumulation is not expected to occur.
- 12.3 **Ecotoxicological effects:**
No data known.
Effects in sewage treatment plants (bacteria toxicity: respiration-/reproduction inhibition):
According to current knowledge adverse effects on water purification plants are not expected.
- 12.4 **Further ecological information**
Other harmful effects

General information:
According to our present knowledge no further data known.

13 Disposal considerations

- 13.1 **Product disposal**
Recommendation:
Dispose of according to regulations by incineration in a special waste incinerator. Observe local/state/federal regulations.
- 13.2 **Packaging disposal**
Recommendation:
Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations.

14 Transport information

- 14.1 **US DOT & Canada TDG Surface**
Valuation Not regulated for transport
Corrosive to Steel or Aluminum: Not corrosive to Steel or aluminum
- 14.2 **Transport by sea IMDG-Code**
Valuation Not regulated for transport
- 14.3 **Air transport ICAO-TI/IATA-DGR**
Valuation Not regulated for transport

15 Regulatory information

- 15.1 **U.S. Federal Regulations**
TSCA inventory status and TSCA information:
This material or its components are listed on or are in compliance with the requirements of the TSCA chemical Substance Inventory.
TSCA 12(b) Export Notification:
This material does not contain any TSCA 12(b) regulated chemicals.
CERCLA Regulated Chemicals:
This material does not contain any CERCLA regulated chemicals.
SARA 302 EHS Chemicals:
This material does not contain any SARA extremely hazardous substances.
SARA 311/312 Hazard Class:
Immediate (acute) health hazard
SARA 313 Chemicals:
This material does not contain any SARA 313 chemicals above de minimus levels.

HAPS:
67-56-1 Methanol

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15.2 U.S. State Regulations

California Proposition 65 Carcinogens:

This material does not contain any chemicals known to the State of California to cause cancer.

California Proposition 65 Reproductive Toxins:

This material does not contain any chemicals known to the state of California to cause reproductive effects.

Massachusetts Substance List:

This material contains no listed components.

New Jersey Right-to-know Hazardous Substance List:

This material contains no listed components.

Pennsylvania Right-to-know Hazardous Substance List:

This material contains no listed components.

15.3 Canadian regulations

This product has been classified in accordance with the Hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Hazard Classes:

D2A, D2B

DSL Status:

This material or its components are listed on the Canadian Domestic Substances List.

Non-DSL Chemicals:

This material does not contain any non-DSL chemicals.

Canadian Ingredient Disclosure List:

This material contains no listed components.

15.4 Other international regulations

EU Risk Phrases:

R-phrase	Description
R-	-

EU Safety Phrases:

S-Phrase	Description
S-	-

Details of international registration status

Listed on the following inventories:

IECSC- China
PICCS- Philippines
ENCs- Japan
ECL- Korea
AICS- Australia
EINECS- Europe

16 Other information

16.1 Additional Information

This Material Safety Data Sheet (MSDS) meets the requirements of the Federal OSHA hazard Communication Standard (29 CFR 1910.1200). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR. This information relates to the specific material designated and may; not be valid for such material used in combination with any other materials or in any process.. Such information is the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This MSDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

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16.2 Glossary of terms:

ACGIH- American Conference of Governmental
Industrial Hygienists
DOT- Dept. of Transportation
hPa- Hectopascals
mPa*s- Milli Pascal- Seconds
OSHA- Occupational Safety and Health Admin.
PEL- Permissible Exposure Limit

ppm- Parts per Million
SARA- Superfund Amendments & Reauthorization Act
STEL- Short Term exposure limit
TSCA- Toxic Substances Control Act
TWA- Time weighted average
WHMIS- Canadian Workplace Hazardous Materials
Identification System

Flash point determination methods

ASTM D56
ASTM D92, DIN 51376, ISO 2592
ASTM D93, DIN 51758, ISO 2719
ASTM D3278, DIN 55680, ISO 3679
DIN 51755

Common Name

Tagliabue (Tag) closed cup
Cleveland open cup
Pensky-Martens closed cup
Setaflash or Rapid closed cup
Abel-Pensky closed cup

16.3 Conversion table:

Pressure: 1 hPa * 0.75 = 1 mm Hg =
1 Torr; 1 bar = 1000 hPa
Viscosity: 1mPa*s = 1 Centipoise
(Cp)