WACKER

Safety Data Sheet

Material: 70702235 **E155**

Version: 2.2 (US) Date of print: 10/17/2016 Date of last alteration: 06/22/2015

1. Product and company identification

1.1 Identification of the substance or preparation:

Commercial product name: **E155**

Use of substance / preparation: Industrial.
release agent .

1.2 Company/undertaking identification:

Manufacturer/distributor:
Wacker Chemical Corporation
3301 Sutton Road
Adrian, MI 49221-9397
USA

Customer information:
InfoLine:
Tel (517) 264-8240, Fax (517) 264-8740
Hours of operation:
Monday - Friday,8 am to 5 pm (eastern standard time)
Corporate website: www.wacker.com

Emergency telephone no. (24h): (517) 264-8500
Transportation emergency: (800) 424-9300 (CHEMTREC, USA)
(703) 527-3887 (CHEMTREC, international)

This SDS was prepared by the Regulatory Affairs and Product Safety Department (RAPS) of Wacker Chemical Corporation.

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS):

Class	Category	Route of exposure
Reproductive toxicity	Category 2	

2.2 Label elements

Labelling (GHS):

Pictogram(s):

Signal Word: Warning

H-Code	Hazard Statements
H361	Suspected of damaging fertility or the unborn child.

P-Code	Precautionary Statements
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P403	Store in a well-ventilated place.
P405	Store locked up.
P501	Dispose of contents/container to waste disposal.

2.3 Other hazards

Product hydrolyses under formation of methanol (CAS no. 67-56-1). Methanol is toxic by inhalation, in contact with skin and if swallowed. Methanol causes damage to organs. Methanol is highly flammable. Inhalation of aerosol spray may damage health.

3. Composition/information on ingredients

3.1 Chemical characterization (preparation)

Chemical characteristics
Polydimethylsiloxane + Polydimethylsiloxane with functional groups

3.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
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 this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product.

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

For skin contact, immediately wipe away excess material. Use a waterless hand cleaner to remove as much of the remaining material as possible. Wash with soap and water.

4.4 After contact with the 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:

Property:	Value:	Method:
Flash point	138 °C (280 °F)	(ASTM D93)
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 .

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 vapours. 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 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 vapours.

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. Spilled substance increases risk of slipping.

Precautions against fire and explosion:
Product can separate methanol. Flammable vapors may accumulate and form explosive mixtures with air in containers, process vessels, including partial, empty and uncleaned containers and vessels, or other enclosed spaces. 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

Maximum airborne concentrations at the workplace:

CAS No.	Material	Type	mg/m^3	ppm	Dust fract.

Further information:
Maximum concentration at workplace recommended by producer: octamethylcyclotetrasiloxane (D4, CAS no. 556-67-2) = 10 ppm (123 mg/m ^{3}).

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.

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
Colour	:	clear
Odour	:	weak, fishy, Garlic, onion

9.2 Safety parameters

Property:		**Value:**	**Method:**
Melting point / melting range	:	not determined	
Boiling point / boiling range	:	not determined	
Flash point	:	138 °C (280 °F)	(ASTM D93)
Ignition temperature	:	not determined	
Lower explosion limit (LEL)	:	not determined	
Upper explosion limit (UEL)	:	not determined	
Vapour pressure	:	0.177318 hPa	
Density	:	0.968 g/cm³	
Water solubility / miscibility	:	insoluble	
pH-Value	:	not determined	
Viscosity (dynamic)	:	not determined	

9.3 Further information

Percent Volatiles	:	< 1 %	
VOC	:	0.648 g/l	(calculated value)
VOC Released During Cure	:	19.4 g/l	(Estimated Value)
Corrosive to Steel or Aluminum	:	Not corrosive to steel or aluminum.	

10. Stability and reactivity

10.1 General information:

If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

10.2 Conditions to avoid

moisture

10.3 Materials to avoid

Reacts with: water , basic substances and acids . Reaction causes the formation of: methanol .

10.4 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.

10.5 Further information:

Hazardous polymerization cannot occur.

11. Toxicological information

11.1 Information on toxicological effects

11.1.1 General information

Data derived for the product as a whole are of higher priority than data for single ingredients.

11.1.2 Acute toxicity

Assessment:

Inhalable aerosols containing aminofunctional polysiloxanes may cause harmful effects in the lung in animal experiments. Due to the large number of influencing parameters (e.g. amine function, degree of substitution, viscosity, composition) an estimation of the toxicological effect on the lung is not possible for untested products of this category. In such cases exposure to inhalable aerosols must be prevented by adequate technical measures.

Product details:

Route of exposure	Result/Effect	Species/Test system	Source
oral	LD_{50}: > 2000 mg/kg	rat	Conclusion by analogy
dermal	LD_{50}: > 2000 mg/kg	rabbit	Conclusion by analogy
by inhalation (spray)	LC_{50}: > 1.9 mg/l; 4 h	rat	test report

11.1.3 Skin corrosion/irritation

Product details:

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

11.1.4 Serious eye damage / eye irritation

Product details:

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

11.1.5 Respiratory or skin sensitization

Product details:

Route of exposure	Result/Effect	Species/Test system	Source
dermal	not sensitizing	guinea-pig	

11.1.6 Germ cell mutagenicity

Product details:

Result/Effect	Species/Test system	Source
negative	mutation assay (in vitro) bacterial cells	OECD 471

11.1.7 Carcinogenicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Data related to ingredients:

Octamethylcyclotetrasiloxane (D4, Impurity):

In a two year combined chronic toxicity and carcinogenicity inhalation study with octamethylcyclotetrasiloxane (OMCTS/D4) in rats, an 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.

Decamethylcyclopentasiloxane (D5, Impurity):

In a two year combined chronic toxicity and carcinogenicity inhalation study with decamethylcyclopentasiloxane (D5) in rats, an increased incidence for (uterine) endometrial tumors was observed in the highest exposure level of 160 ppm in female rats. The same effects were not seen at the other dose levels of 10 and 40 ppm. Whether or not this increase in incidence is truly related to the exposure to D5 is questionable and yet to be determined. Based on our present knowledge it is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans.

11.1.8 Reproductive toxicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Data related to ingredients

Octamethylcyclotetrasiloxane (D4, Impurity):

In a two generation reproductive study via inhalation with OMCTS/D4 rats, decreased mean live litter size and prolonged labor (dystocia) were observed at the 500 ppm and 700 ppm exposure levels. The relevance of these effects in humans cannot be determined at this time. 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. Based on animal experiments there is no indication of developmental effects.

11.1.9 Specific target organ toxicity (single exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.10 Specific target organ toxicity (repeated exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.11 Aspiration hazard

Assessment:

In case an aspiration hazard is based on ingredients, this can be seen from the classification and labeling of the whole product.

11.1.12 Further toxicological information

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other information: The results of dermal penetration studies indicate very low potential for absorption through the skin.

12. Ecological information

12.1 Toxicity

Assessment:

According to current knowledge adverse effects on water purification plants are not expected.

12.2 Persistence and degradability

Assessment:

Elimination by adsorption to activated sludge. Biologically not degradable.

12.3 Bioaccumulative potential

Assessment:

Bioaccumulation is not expected to occur.

12.4 Mobility in soil

Assessment:

Absorbed by floating particles. Separation by sedimentation.

12.5 Other adverse effects

none known

13. Disposal considerations

13.1 Product disposal

Recommendation:
Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

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. Uncleaned packaging should be treated with the same precautions as the material.

14. Transport information

14.1 US DOT & CANADA TDG SURFACE

Valuation .....: Not regulated for transport

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 (Hazardous Air Pollutants):
This material does not contain any hazardous air pollutants.

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 SDS 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.

15.4 Details of international registration status

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea) ..... :	**ECL** (Existing Chemicals List): This product is listed in, or complies with, the substance inventory.
Japan ..... :	**ENCS** (Handbook of Existing and New Chemical Substances): This product is listed in, or complies with, the substance inventory.
Australia ..... :	**AICS** (Australian Inventory of Chemical Substances): This product is listed in, or complies with, the substance inventory.
People's Republic of China ..... :	**IECSC** (Inventory of Existing Chemical Substances in China): This product is listed in, or complies with, the substance inventory.
Canada ..... :	**DSL** (Domestic Substance List): This product is listed in, or complies with, the substance inventory.
Philippines..... :	**PICCS** (Philippine Inventory of Chemicals and Chemical Substances): This product is listed in, or complies with, the substance inventory.
United States of America (USA)..... :	**TSCA** (Toxic Substance Control Act Chemical Substance Inventory): This product is listed in, or complies with, the substance inventory.
European Economic Area (EEA)..... :	**REACH** (Regulation (EC) No 1907/2006): General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

16. Other information

16.1 Additional information:

This Safety Data Sheet (SDS) 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 Regulations (CPR) and the SDS 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 to 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 SDS 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.

Vertical lines in the left-hand margin indicate changes compared with the previous version.

All deliveries are subject to the WACKER SILICONES Health Care Policy, which is available at www.wacker.com.

16.2 Glossary of Terms:

ACGIH - American Conference of Governmental Industrial Hygienists
DOT - Department of Transportation
hPa - Hectopascals
mPa*s - Milli Pascal-Seconds
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit
ppm - Parts per Million
SARA - Superfund Amendments and 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	**Common name**
ASTM D56	Tagliabue (Tag) closed cup
ASTM D92, DIN 51376, ISO 2592	Cleveland open cup
ASTM D93, DIN 51758, ISO 2719	Pensky-Martens closed cup
ASTM D3278, DIN 55680, ISO 3679	Setaflash or Rapid closed cup
DIN 51755	Abel-Pensky closed cup

16.3 Conversion table:

Pressure: 1 hPa * 0.75 = 1 mm Hg = 1 torr; 1 bar = 1000 hPa
Viscosity: 1 mPa*s = 1 centipoise (cP)