TED PELLA, INC.
Microscopy Products for Science and Industry

Material Safety Data Sheet
Product No. 155-9 GridStick™ Adhesive
Issue Date (09-14-06)
Review Date (04-12-12)

Section 1: Product and Company Identification
Product Name: GridStick™ Adhesive
Synonym: Gridstick Wizard
Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	**%**	**OSHA PEL mg/m3**	**ACGIH TWA mg/m3**	**NTP**	**IARC**	**OSHA regulated**
Xylene, Mixed (1330-20-7) containing m-Xylene (108-38-3) o-Xylene (95-47-6) p-Xylene (106-42-3)	25.3 to 67.6	435 100 PPM	435 100 PPM	No	No	No
Ethylbenzene (100-41-1)	≤ 12.8	435 100 PPM	435 100 PPM	No	Yes	Yes
Isopropyl alcohol (67-63-0)	0.63-3.14	980 400 PPM	200 PPM	No	No	No
Octamethylcyclotetrasiloxane (556-67-2)	0.63-3.14	ND	ND*	No	No	No
Tetra(trimethylsiloxy)silane (3555-47-3)	0.63-3.14	ND	ND	No	No	No
Decamethylcyclopentasiloxane (541-02-6)	0.63-3.14	Section 11	Section 11	No	No	No
Toluene (108-88-3)	≤ 0.063	200 PPM	50 PPM	No	No	No

* Dow Corning Corporation: TWA 10 ppm.

Section 3: Hazard Identification

Emergency overview

Appearance: Colorless viscous liquid.
Immediate effects: Severe irritation.

Potential health effects

Primary Routes of entry: Inhalation, skin, eyes and ingestion.
Signs and Symptoms of Overexposure: ND
Eyes: Direct contact may cause severe irritation. Vapor may cause eye irritation
Skin: May cause moderate irritation.
Ingestion: May cause vomiting. Aspiration of liquid while vomiting may injure lungs seriously
Inhalation: Vapor may irritate nose and throat.
Chronic Exposure: Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis. Overexposure may injure internally if absorbed. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination. It may also injure the following organ(s): Liver, kidneys, nervous system, blood, and lungs. Reproductive organs: Bone marrow. Repeated ingestion or swallowing large amounts may injure internally.
Chemical Listed As Carcinogen Or Potential Carcinogen: Ethylbenzene (100-41-1).
See Toxicological Information (Section11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: Immediately flush with water for 15 minutes. Get medical attention.
Skin Contact: Remove from skin and immediately flush with water for 15 minutes. Get medical attention if irritation or ill effects develop or persist.
Inhalation: Remove to fresh air. Get medical attention if ill effects persist.
Ingestion: Get immediate medical attention. Only induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person.

Note to physician

Treatment: Treat according to person's condition and specifics of exposure.
Medical Conditions generally Aggravated by Exposure: No known applicable information.

Section 5: Fire Fighting Measures

Flash Point: Dow Corning Adhesive: 55.9 °F (13.3 °C) Methods: Pensky-Martens Closed Cup
Xylene: 29.444 °C (85 °F) Closed Cup.
Gridstick™ Adhesive: NE
Flammable Limits: NE
Auto-ignition point: NE
Fire Extinguishing Media: Large fires: Use dry chemical, foam or water spray. Small fires: Use carbon dioxide (CO2), dry chemical or water spray. Water can be used to cool

fire exposed containers.
Special Fire Fighting Procedures: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel to a source of ignition and flash back. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge.
Hazardous combustion products: May produce carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide and formaldehyde.
DOT Class: Flammable liquid

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: Remove possible ignition sources. Use full face respirator. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection. Determine whether to evacuate or isolate the area according to your local emergency plan. Dike or use other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Precautions to be Taken in Handling and Storage: Traces of benzene (carcinogen) may form if heated in air above 300 °F (149 °C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid skin contact. Do not take internally. Avoid eye contact. Avoid breathing vapor. Keep container closed and away from heat, sparks, and flame. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge.
Storage temperature: ND
Storage Pressure: ND

Section 8: Exposure Controls / Personal Protection
Engineering Controls
Ventilation required: Local and general ventilation recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended

limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

Personal Protection Equipment

Respiratory protection: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Protective gloves: Protective gloves made of Teflon®, Silver Shield®, Viton®, or 4H® are recommended.
Skin protection: ND
Eye protection: Chemical worker's goggles.
Additional clothing and/or equipment: ND

Exposure Guidelines

See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Viscous colorless liquid.
Odor (threshold): Aromatic odor.
Specific Gravity (H_2O=1): 0.98 @ 25 °C
Viscosity: 40000 cSt
Vapor Pressure (mm Hg): ND
Vapor Density (air=1): ND
Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): ND
Boiling Point: 141 °C
Freezing point / melting point: ND
pH: ND
Solubility in Water: ND
Molecular Weight: ND

Section 10: Stability and Reactivity

Stability: Stable
Conditions to Avoid: Temperatures above 300 °F (149 °C).
Materials to Avoid (Incompatibility): Oxidizing materials.
Hazardous Decomposition Products: Thermal decomposition may produce carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide and formaldehyde.
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Results of component toxicity test performed: A 2 year combined chronic/carcinogenicity assay was conducted on decamethylcyclopentasiloxane (D5). Fischer-344 rats were exposed by whole-body vapor inhalation 6 hrs/day, 5 days/week for up to 24 months to 0, 10, 40, or 160 ppm of D5. A statistically significant increase in the trend for uterine endometrial tumors was observed in female rats exposed for 24 months at 160 ppm. Whether or not this increase in incidence is truly related to the exposure to decamethylcyclopentasiloxane is questionable and yet to be determined. The

160 ppm exposure concentration greatly exceeds workplace or consumer exposure. It is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans. The exposure guideline will be reevaluated when a better understanding of the significance of this new data is developed. Repeated inhalation or oral exposure of mice and rats to octamethylcyclotetrasiloxane and decamethylcyclopentasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. Good industrial hygiene practice minimizes inhalation exposure to any chemical. Dow Corning has set an exposure guideline of 10 ppm TWA for these two materials. In developmental toxicity studies in which rats and rabbits were exposed to octamethylcyclotetrasiloxane by vapor inhalation at concentrations up to 700 ppm and 500 ppm respectively, no teratogenic effects were observed.
Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. A 2 yr combined chronic/carcinogenicity assay was conducted on octamethylcyclotetrasiloxane (D4). Fischer-344 rats were exposed by whole-body vapor inhalation 6 hrs/day, 5 days/week for up to 104 weeks to 0, 10, 30,150 or 700 ppm of D4. A statistically significant increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas (benign tumors) was observed in female rats at 700 ppm. Carcinogens: Ethylbenzene (100-41-1). Tetragens: Ethylbenzene (100-41-1). Evidence of Teratogenicity (birth defects) in laboratory animals. Mutagens: Ethylbenzene (100-41-1). Genetically active IN VIVO assay(s). Reproductive effects: Octamethylcyclotetrasiloxane (556-67-2).
Human experience: 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.
This product **does** contain compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information
Ecological Information: Complete information is not yet available.
Chemical Fate Information: Complete information is not yet available.

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: D001: Ignitable. TCLP: D018. Xylene (1330-02-7): U239. Toluene (108-88-3): U221.
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information
US DOT Information: Proper shipping name: Flammable liquids (Adhesives).
Hazard Class: 3
Packaging group: II
UN Number: UN1133
Limitations: ND
IATA: Proper shipping name: Flammable liquids (Adhesives)
Hazard Class: 3
Packing group: II
UN Number: UN1133
Limitations: ND
Domestic shipments only:
IMO: Proper shipping name: Flammable liquids (Adhesives)
Class: 3
UN Number: UN1133
Packing group: II
EMS: ND
MFAG: ND
Marine Pollutant: ND
Canadian TDG: ND
IMDG Page: ND
Limitations: ND

Section 15: Regulatory Information
United States Federal Regulations
MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.
SARA: Section 302: None. Section 304: Xylene (1330-20-7). Ethylbenzene (100-41-4).
SARA Title III: Section 311/312: Acute: Yes. Chronic: Yes. Fire: Yes. Pressure: No. Reactive: No. Section 313: Xylene (1330-20-7). Ethylbenzene (100-41-4). Isopropyl Alcohol (67-63-0).
RCRA: Listed under D-series. Xylene (1330-02-7): U-series. Toluene (108-88-3): U-series.
TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
CERCLA: Xylene (1330-02-7): RQ = 100 lbs (45.4 kg). Ethylbenzene (100-41-4): RQ = 1000 lbs (454 kg). Toluene (108-88-3): RQ = 1000 lbs (454 kg).
State Regulations
California Proposition 65: Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other

reproductive harm: Ethylbenzene (100-41-4):Carcinogenic. Toluene (108-88-3): Developmental toxin.
Massachusetts: Xylene (1330-20-7). Ethylbenzene (100-41-4). Isopropyl alcohol (67-63-0).
New Jersey: Trimethylated silica (68988-56-7). Xylene (1330-20-7). Dimethyl siloxane, hydroxy-terminated (70131-67-8). Ethylbenzene (100-41-4). Isopropyl alcohol (67-63-0). Octamethylcyclotetrasiloxane (556-67-2).
Pennsylvania: Xylene (1330-20-7). Ethylbenzene (100-41-4). Isopropyl alcohol (67-63-0).
New Jersey: Trimethylated silica (68988-56-7). Xylene (1330-20-7). Dimethyl siloxane, hydroxy-terminated (70131-67-8). Ethylbenzene (100-41-4). Isopropyl alcohol (67-63-0).

International Regulations

Canada WHMIS: This product contains material listed on the CPR Inventory List.
Europe EINECS Numbers: Xylene, Mixed (1330-20-7): EINECS#: 215-535-7. Isopropyl alcohol (67-63-0): EINECS#: 200-661-7. Octamethylcyclotetrasiloxane (556-67-2): EINECS#: 209-136-7. Tetra(trimethylsiloxy)silane (3555-47-3): EINECS#: 222-613-4. Decamethylcyclopentasiloxane (541-02-6): EINECS#: 208-764-9. Toluene (108-88-3): EINECS#: 203-625-9.

Section 16: Other Information

Label Information: ND
European Risk and Safety Phrases: ND
European symbols needed: ND
Canadian WHMIS Symbols: ND
NFPA Hazard Rating: Health: **2**; Fire: **3**; Reactivity: **0**
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Abbreviations used in this document

NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.