Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Polyurethan Protective Tape Adhesion Promoter Nr.86 A
MANUFACTURER: 3M
DIVISION: Aerospace Aircraft Maintenance Division

ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 08/23/13
Supercedes Date: 06/19/08

Document Group: 07-9764-7

Product Use:
Intended Use: Tolene free Industrial Adhesion Promoter.

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
SOLVENT	67-63-0	50 - 60
SOLVENT	71-23-8	30 - 40
POLYAMIDE RESIN	Trade Secret	5 - 10
WATER	7732-18-5	1 - 5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: CLEAR SOLVENT ODOR
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause severe eye irritation. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.
Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.
Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.
If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	750 ºF
Flash Point	53 ºF [*Test Method:* Closed Cup]
Flammable Limits(LEL)	2 % volume
Flammable Limits(UEL)	12.7 % volume
OSHA Flammability Classification:	Class IB Flammable Liquid

5.2 EXTINGUISHING MEDIA
Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.

6.2. Environmental precautions
For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with detergent and water. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Avoid breathing of vapors, mists or spray. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid contact with oxidizing agents. For industrial or professional use only.

7.2 STORAGE
Store away from acids. Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area. Keep container tightly closed. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact with vapors, mists, or spray.
The following eye protection(s) are recommended: Safety Glasses with side shields
.

8.2.2 Skin Protection
Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Neoprene
Nitrile Rubber
Natural Rubber
.

8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray.
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
SOLVENT	ACGIH	TWA	200 ppm	
SOLVENT	ACGIH	STEL	400 ppm	
SOLVENT	OSHA	TWA	980 mg/m3	
SOLVENT	ACGIH	TWA	100 ppm	
SOLVENT	OSHA	TWA	500 mg/m3	

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	CLEAR SOLVENT ODOR
General Physical Form:	Liquid
Autoignition temperature	750 ºF
Flash Point	53 ºF [*Test Method:* Closed Cup]
Flammable Limits(LEL)	2 % volume
Flammable Limits(UEL)	12.7 % volume
Boiling Point	Approximately 181 ºF

Density	*No Data Available*
Vapor Density	2.1 [*Ref Std:* AIR=1]
Vapor Density	*No Data Available*
Vapor Pressure	33 mmHg [@ 68 ºF]
Vapor Pressure	*No Data Available*
Specific Gravity	0.82 [@ 68 ºF] [*Ref Std:* WATER=1]
pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility In Water	*No Data Available*
Solubility in Water	Appreciable
Evaporation rate	*No Data Available*
Volatile Organic Compounds	746 g/l [*Test Method:* calculated SCAQMD rule 443.1]
Kow - Oct/Water partition coef	*No Data Available*
Percent volatile	94 % weight
VOC Less H2O & Exempt Solvents	746 g/l [*Test Method:* calculated SCAQMD rule 443.1]
Viscosity	50 - 100 centipoise

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Sparks and/or flames

10.2 Materials to avoid
None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14:TRANSPORT INFORMATION

ID Number(s):
41-3701-2024-2, 70-0707-4280-7, 70-0707-5340-8

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
Contact 3M for more information.

311/312 Hazard Categories:
Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. Contact 3M for more information.

INTERNATIONAL REGULATIONS
Contact 3M for more information.

WHMIS: Hazardous

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 2 **Flammability:** 3 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to

be generated in significant quantities.

HMIS Hazard Classification

Health: 2 **Flammability:** 3 **Reactivity:** 0 **Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:
Section 1: Product name information was modified.
Section 1: Product use information information was modified.
Section 16: Disclaimer (second paragraph) information was modified.
Section 3: Potential effects from skin contact information information was modified.
Section 3: Potential effects from inhalation information information was modified.
Section 3: Potential effects from ingestion information information was modified.
Section 7: Handling information information was modified.
Section 10: Hazardous decomposition or by-products table information was modified.
Section 13: Waste disposal method information information was modified.
Section 8: Eye/face protection information information was modified.
Section 8: Skin protection - recommended gloves information information was modified.
Section 8: Respiratory protection - recommended respirators information information was modified.
Section 4: First aid for ingestion (swallowing) - decontamination - information was modified.
Section 4: First aid for ingestion (swallowing) - medical assistance - information was modified.
Section 8: Respiratory protection - recommended respirators information was modified.
Section 14: Transportation legal text information was modified.
Section 16: HMIS explanation information was modified.
Page Heading: Product name information was modified.
Section 15: Inventories information information was modified.
Section 9: Density information information was modified.
Section 9: Vapor density value information was modified.
Section 9: Vapor pressure value information was modified.
Section 9: Boiling point information information was modified.
Section 5: Flammable limits (UE) information information was modified.
Section 5: Flammable limits (LEL) information information was modified.
Section 5: Autoignition temperature information information was modified.
Section 9: Vapor density text information was modified.
Section 9: Vapor pressure text information was modified.
Section 5: Flash point information information was modified.
Section 9: Property description for optional properties information was modified.
Section 9: Specific gravity information information was modified.
Section 9: pH information information was modified.
Section 9: Melting point information information was modified.
Section 9: Solubility in water value information was modified.
Section 9: Solubility in water text information was modified.
Section 8: Respiratory protection - recommended respirators guide information was modified.
Section 9: Flash point information information was modified.
Section 9: Flammable limits (LEL) information information was modified.
Section 9: Flammable limits (UEL) information information was modified.
Section 9: Autoignition temperature information information was modified.
Section 2: Ingredient table information was modified.
Section 8: Exposure guidelines ingredient information information was modified.
Section 6: 6.2. Environmental precautions heading information was added.
Section 6: 6.1. Personal precautions, protective equipment and emergency procedures heading information was added.

Section 10.1 Conditions to avoid heading information was added.
Section 10.2 Materials to avoid heading information was added.
Section 16: Web address information was added.
Section 6: Personal precautions information information was added.
Section 6: Environmental procedures information information was added.
Section 6: Methods for cleaning up information information was added.
Section 10: Materials to avoid physical property information was added.
Section 10: Conditions to avoid physical property information was added.
Section 1: Address information was added.
Copyright information was added.
Company logo information was added.
Section 6: Clean-up methods heading information was added.
Telephone header information was added.
Company Telephone information was added.
Section 1: Emergency phone information information was added.
Section 1: Emergency phone information information was deleted.
Company Logo information was deleted.
Copyright information was deleted.
Section 16: Web address heading information was deleted.
Section 6: Release measures information information was deleted.
Section 6: Release measures heading information was deleted.
Section 10: Materials and conditions to avoid physical property information was deleted.
Section 1: Address line 1 information was deleted.
Section 1: Address line 2 information was deleted.
Section 8: Respiratory protection - recommended respirators punctuation information was deleted.

3M USA MSDSs are available at www.3M.com