Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Scotch-Weld(TM) Hot Melt Adhesive 3748V0 PG, 3748V0 Q / 3748V0 TC (JA-7424)
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division

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

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

Issue Date: 06/24/10
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Document Group: 11-6516-6

Product Use:
Intended Use: Adhesive

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Amorphous Polypropylene Copolymer	9010-79-1	15 - 40
Brominated Flame Retardant	32588-76-4	10 - 30
Hydrocarbon Resin	69430-35-9	10 - 30
Styrene-Butadiene Polymer	66070-58-4	7 - 13
Polyethylene	9002-88-4	5 - 10
Antimony Trioxide	1309-64-4	3 - 7
Polyolefin Blend	9003-07-0	1 - 5
Paraffin Wax	8002-74-2	1 - 5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: MITS data: STICK
Odor, Color, Grade: pale yellow, mild resinous odor

General Physical Form: Solid
Immediate health, physical, and environmental hazards: May cause thermal burns. Contains a chemical or chemicals which can cause cancer.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Vapors from heated material may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

During heating:
Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.

Skin Contact:
Prolonged or repeated exposure may cause:
Dermal Effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.

During heating:
Thermal Burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction.

Inhalation:
Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:
Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Ingredient	C.A.S. No.	Class Description	Regulation
Antimony Trioxide	1309-64-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

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. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

Skin Contact: Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

Inhalation: If signs/symptoms develop, remove person to fresh air. If signs/symptoms persist, 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	626 ºF
Flash Point	536 ºF [*Test Method:* Cleveland Open Cup]
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*
OSHA Flammability Classification:	Not Applicable

5.2 EXTINGUISHING MEDIA

Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. 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.

Environmental procedures
Place in a closed container approved for transportation by appropriate authorities. 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. Collect as much of the spilled material as possible. Clean up residue.

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
Avoid skin contact with hot material. For industrial or professional use only.

7.2 STORAGE
Store away from heat. Store out of direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact.
The following eye protection(s) are recommended: Safety Glasses with side shields
Indirect Vented Goggles
.

8.2.2 Skin Protection
Avoid skin contact. Avoid skin contact with hot material. Wear appropriate gloves, such as Nomex, when handling this material to prevent thermal burns. 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.

8.2.3 Respiratory Protection
Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing
Do not ingest.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
ANTIMONY COMPOUNDS	ACGIH	TWA, as Sb	0.5 mg/m3	
ANTIMONY COMPOUNDS	OSHA	TWA, as Sb	0.5 mg/m3	
Antimony Trioxide	CMRG	TWA, as Sb	0.2 mg/m3	
ANTIMONY TRIOXIDE PRODUCTION	ACGIH	Limit value not	****Missing	Cntrl all exposr-low as possib

		established	**Data****** No UOM specified or needed.
Paraffin Wax	ACGIH	TWA, as fume	2 mg/m3
Polyolefin Blend	CMRG	TWA, as respirable dust	5 mg/m3
Polyolefin Blend	CMRG	TWA, as total dust	10 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

Specific Physical Form:	MITS data: STICK
Odor, Color, Grade:	pale yellow, mild resinous odor
General Physical Form:	Solid
Autoignition temperature	626 ºF
Flash Point	536 ºF [*Test Method:* Cleveland Open Cup]
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*
Boiling point	*Not Applicable*
Density	1.09 g/cm3
Vapor Density	Nil
Vapor Pressure	Nil
Specific Gravity	1.09 [*Ref Std:* WATER=1]
pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility in Water	Nil
Evaporation rate	*Not Applicable*
Volatile Organic Compounds	*Not Applicable*
Kow - Oct/Water partition coef	*No Data Available*
Percent volatile	0 % weight
VOC Less H2O & Exempt Solvents	*No Data Available*
Viscosity	*Not Applicable*

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Heat

10.2 Materials to avoid
None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Antimony	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: Dispose of waste product in a sanitary landfill. Incinerate in an industrial or commercial facility in the presence of a combustible material. As a disposal alternative, incinerate in an industrial or commercial facility.

EPA Hazardous Waste Number (RCRA): Not regulated

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

SECTION 14:TRANSPORT INFORMATION

ID Number(s):
62-3768-7232-1, 62-3768-7234-7, 62-3768-9132-1, 62-3768-9330-1, 62-3768-9830-0

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. *3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and* ***not the packaging, labeling, or marking requirements.*** *The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Antimony Trioxide (ANTIMONY COMPOUNDS)	1309-64-4	3 - 7

STATE REGULATIONS

Contact 3M for more information.

CALIFORNIA PROPOSITION 65

Ingredient	C.A.S. No.	Classification
Antimony Trioxide	1309-64-4	**Carcinogen

** WARNING: contains a chemical which can cause cancer.

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.

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: 1 **Flammability:** 1 **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.

Revision Changes:
Section 1: Product use information was modified.
Section 1: Division name was modified.
Copyright was modified.
Section 3: Potential effects from eye contact was modified.
Section 3: Potential effects from skin contact information was modified.
Section 3: Potential effects from inhalation information was modified.
Section 3: Potential effects from ingestion information was modified.
Section 7: Handling information was modified.
Section 8: Skin protection phrase was modified.
Section 8: Prevention of swallowing information was modified.
Section 13: Waste disposal method information was modified.
Section 8: Eye/face protection information was modified.
Section 3: Immediate other hazard(s) was modified.
Section 14: Transportation legal text was modified.
Section 9: Property description for optional properties was modified.
Section 14: ID Number Heading Template 1 was added.
Section 14: ID Number(s) Template 1 was added.
Section 2: Ingredient table was added.
Section 15: EPCRA 313 information was added.
Section 15: EPCRA 313 text was added.
Section 8: Exposure guidelines ingredient information was added.
Section 8: Exposure guidelines data source legend was added.
Section 3: Carcinogenicity table was added.
Section 3: Carcinogenicity heading was added.
Section 15: California proposition 65 ingredient information was added.
Section 15: California proposition 65 heading was added.
Section 15: California proposition 65 cancer warning was added.
Section 6: Environmental procedures heading was added.
Section 6: Personal precautions heading was added.
Section 10.1 Conditions to avoid heading was added.
Section 10.2 Materials to avoid heading was added.
Section 6: Personal precautions information was added.
Section 6: Environmental procedures information was added.

Section 6: Methods for cleaning up information was added.
Section 10: Materials to avoid physical property was added.
Section 10: Conditions to avoid physical property was added.
Section 8: Hand protection information was added.
Section 6: Clean-up methods heading was added.
Section 3: Other potential health effects heading was deleted.
Section 6: Release measures information was deleted.
Section 6: Release measures heading was deleted.
Section 10: Materials and conditions to avoid physical property was deleted.
Section 3: Other health effects information was deleted.

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

Scotch-Weld™ 3748 V-0 Adhesive

Product Data Sheet

Updated : April 2008
Supersedes : March 1996

Product Description

Scotch-Weld Adhesive 3748 V-0 is a tough, flexible hot melt adhesive which exhibits excellent low temperature thermal shock properties with good heat resistance.
It shows high peel adhesion to many substrates especially normally hard to bond materials such as polypropylene and polyethylene.

3748 V-0 also exhibits excellent electrical and non-corrosive properties, and has a UL 94 fire rating of V-0.

Physical Properties
Not for specification purposes

Base	Polyolefin	
Colour	Pale Yellow	
Viscosity cP [1]	at 180°C - 8500 at 200°C - 5000 at 220°C - 3300	
Temperature Control Setting	4	
FDA Accepted [2]	No	
Sizes Available	26 x 73 mm for the Scotch-Weld Air Powered Applicator. 15 x 203 mm for the Scotch-Weld Touch Control Quadrack Applicator. 15 x 48 mm for the Scotch-Weld Touch Control Applicator.	
Shelf Life	12 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

1 Brookfield Thermosel Viscometer.
2 FDA Reg. 175.105 (adhesives) CFR Title 21.

Performance Characteristics
Not for specification purposes

Shore D Hardness (ASTM D 2240)	26	
Ball and Ring Softening Point [3]	152 °C	
Heat Resistance	80 °C	

Performance Characteristics (Cont...)
Not for specification purposes

Overlap Shear Strength 3M/AC & S Test Method C-3096

Substrate	OLS (psi)
FR-4 to FR-4	215
Fir to Fir	275
Polypropylene to Polypropylene	250
Polyethylene to Polyethylene	220

180° Peel Strength 3M/AC & S Test Method C-3168

Substrate	Peel Strength (PIW)
Wire Mesh to FR-4	38
Wire Mesh to PP	35
Wire Mesh to PE	27
Wire Mesh to Fir	25

Thermal Shock Resistance Potted Washer Olyphant Test — 3M/AC & S Test Method C-3167

+100°C (air) to -40°C (liquid)	Pass 5 cycles

Thermal Co-efficient of Expansion	155 x 10^{-8} unit/unit/°C	
Thermal Conductivity (ASTM C 177) BTU-ft/sq ft-hr°F	.111	
Dielectric Constant at 1 KHz (ASTM D 150)	2.3 at 23°C*	
Dissipation Factor at 1 KHz (ASTM D 150)	0.0010 at 23°C*	
Dielectric Strength at 1 KHz (ASTM D 149)	1400 Volts/Thou*	
Volume Resistivity (ASTM D 257) at 500 Volts	6.0 x 17^{17} ohm-cm	
Surface Resistivity (ASTM D 257) ohms/square	4.5 x 10^{17}	
NB *	Data at different frequencies available on request.	

Performance Characteristics (Cont...)
Not for specification purposes

Solvent Resistance (1 hour/30 days immersion)

In Acetone	A/B	A = No Attack
In Isopropyl Alcohol	A/B	B = Slight Surface Attack
In Freon TF	B/C	C = Severe Attack
In Freon TMC	B/C	
In 1,1,1 Trichloroethylene	B/C	

Applications

3748 V-0 is particularly suitable for the bonding and rigidisation of components on printed circuit boards where thermal and mechanical shock resistance is required.
3748 V-0 is also suitable for bonding low energy plastics such as polypropylene and polyethylene.
Typical uses for 3748 V-0 include rigidising components, potting, wire fastening, sealing connectors, vibration protection, stabilising loose components, coil termination, coil attachment, holding components prior to soldering, insulation of bare conductors, polyolefin box bonding and sealing polyolefin coated carbon boxes.

Specifications

U.L. Recognition (File No. E.16941)

UL94
Flammability V-0.

Health and Safety Information

Hot adhesive vapours may irritate eyes and respiratory system. Do not touch hot extruded adhesive or applicator tip. Avoid prolonged breathing of vapours.
Avoid eye exposure to heated product vapours. In case of skin contact with hot adhesive, immediately flush with cold water and cover with a clean dressing. Do not attempt to remove adhesive, have burn treated by a doctor.

For further health and safety information, please contact the 3M Toxicology Department in Bracknell on (0344) 858000.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

Industrial Adhesives & Tapes Division

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