

Technical Data

Dated: May 1, 1984
 Supersedes previous
 product data for Scotch-Grip Brand
 Contact Cements 1357,
 4795, 1390 and 3M Adhesive 1368

11-88



High Performance Contact Adhesives

1357
 1357 Neutral
 1357-L
 1357-NF

Vendor:
 Iowa
 Midland
 Supply

Description:

- High performance, polychloroprene base, "contact" adhesives, offer long bonding range (up to 60 minutes), and excellent initial strength. Can be brush or spray applied.
- Used to bond rubber, cloth, metal, wood, foamed glass, paper honeycomb, decorative plastic laminates.
- High Performance Contact Adhesive 1357 meets specification requirements of MMM-A-121, and MIL-A-21366.

Typical Physical Properties:

Product	Color	Viscosity* (cps) (Approx.)	Solids Content By Wt.	Net Wt. Lbs./Gal. (Approx.)	Flash Point (c.c.)	Coverage (Sq. Ft./Gal.) @ 2.5 Grams/Sq. Ft. Dry Wt.	Solvent**	Flammability
1357	Gray/ Green	225	25%	6.8	-14°F.	308	Petroleum Distillate, Toluene, Acetone, MEK	Extremely Flammable
1357 Neutral	Light Yellow	225	25%	6.8	-14°F.	308	Petroleum Distillate, Toluene, Acetone, MEK	Extremely Flammable
1357-L	Gray/ Green	50	19%	6.7	-14°F.	231	Petroleum Distillate, Toluene, Acetone, MEK	Extremely Flammable
1357-NF	Gray/ Green	1250	17%	11.1	None	342	1,1,1- Trichlo- roethane	Nonflammable in Wet State

*Brookfield Viscometer RVF #4 sp @ 20 rpm.

**These products contain non-photochemically reactive solvent, Southern California APCD Rule 102 (1-9-76).

Equipment Suggestions:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral, 1357-L and 1357-NF

Production Type Spray Equipment* 2:1 Pump (Stainless Steel for 1357-NF)

Spray Gun	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement**	Fluid Flow***
DeVilbiss JGK	770	FX	80 psi	18½ CFM	6 fl. oz./min.
Binks No. 62	63PH	63B	80 psi	23 CFM	6 fl. oz./min.

*These adhesives are not recommended for airless spraying.

**5 H.P. Compressor for continuous use.

***To Measure Fluid Flow: Pressurize fluid source only; pull trigger, flow material into measuring device for 60 seconds; increase or decrease fluid source pressure to obtain desired fluid flow.

All material hoses should be nylon or PVA lined. Packings and glands in contact with the adhesive should be made of Teflon. When product is sprayed, use functioning spray booth.

Directions For Use:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral, 1357-L and 1357-NF

Surface Preparation: Surfaces must be clean, dry and dust free. Wiping with Scotch-Grip Solvent No. 3* will aid in removing oil and dirt. Temperature of adhesive and surfaces during fabrication should be at least 54°F. DO NOT ALLOW ADHESIVE STORAGE TEMPERATURE TO GO BELOW 40°F. It is necessary that these adhesives be agitated thoroughly prior to each use, especially if there are long periods of standing between use. Periodic agitation during use is advisable.

Application: These adhesives are designed primarily for spray applications. We recommend using the equipment suggested in this sheet. Failure to do so may lead to bond failure. For optimum results, apply 2.5 gm. to 3.5 gm./ft.² dry to each surface. Unusually porous surfaces may require heavier applications.

Safe working conditions, according to applicable safety regulations and OSHA requirements must be established where these adhesives are to be used. Scotch-Grip Adhesive 1357, 1357 Neutral and 1357-L are flammable adhesives and, therefore, the precautions listed under "Storage and Handling" should be observed. For proper ventilation, exhaust and air movement, for your particular use or application, consult with a qualified expert such as a professional industrial hygienist, an insurance underwriter, or the like.

Drying Time: These adhesives dry in about 10 minutes. High humidity will slow drying—high temperatures speed up the drying. This adhesive has a maximum bonding range of 30 minutes when applied to both bond surfaces under average conditions of 70°F. and 35% R.H. If the adhesive becomes too dry, apply another thin coat of adhesive to one surface, allow to become slightly tacky, and bond.

Relative humidities above 50% will normally cause blushing (condensation of moisture on surface) and a false bond. To correct this, we recommend a force drying temperature of 180-220°F. Force drying will also remove the solvent more rapidly, thereby speeding production.

Bonding Techniques: There are four bonding procedures one can utilize: open time, hot bonding, solvent reactivation* and heat reactivation. We suggest you consult your 3M adhesives representative for assistance in determining the procedure best suited for your application.

*When using solvents extinguish all ignition sources and observe proper precautionary measures for handling such materials.

Note: Vapors from 1357-NF can cause corrosive effects on ducts in work areas.

Performance Characteristics:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral, 1357-L and 1357-NF

180° PEEL STRENGTH—Canvas/Steel			OVERLAP SHEAR STRENGTH—½" Birch/Birch		
Time @ 75°F.	Test Temp.	Value (lbs./in. width)	Time @ 75°F.	Test Temp.	Value (lbs./sq. in.)
1 day	75°F.	16	after 2 wk.	75°F.	452
3 days	75°F.	31	after 3 wk.	75°F.	536
5 days	75°F.	42	after 3 wk.	-30°F.	964
7 days	75°F.	26	after 3 wk.	180°F.	199
2 wk.	75°F.	24	after 3 wk.	225°F.	158
3 wk.	75°F.	23			
after 3 wk.	-30°F.	13			
after 3 wk.	150°F.	18.5			
after 3 wk.	180°F.	12			

NOTE: All test data reported represent the typical average obtained using the testing procedures described. The typical range, where applicable, represents the range in average values that can be expected on multiple lots of material.

The data reported portray product performance and are not intended to be used for specification limits. Establishment of specification limits, certification requirements, and the test procedures involved must be reviewed and approved by 3M.

Storage and Handling:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral, 1357-L and 1357-NF

Store products at 60-80°F for maximum storage life. Higher temperatures reduce normal storage life. Temperature below 40°F may cause irreversible gelled products. Rotate stock on a "first in-first out" basis. Upon request your 3M Adhesives, Coatings and Sealers Sales Representative will be pleased to advise you of the anticipated shelf life of any specified product under the storage conditions in your plant.

Cleanup can be accomplished with Scotch-Grip Brand Solvent No. 2. When using solvents for cleanup extinguish all ignition sources and observe proper precautionary measures for handling such materials.

Shipping Information:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral and 1357-L

National Motor Freight Classification: Adhesives, NOI

The following information is provided to help you determine the proper packaging, labeling and marking in accordance with hazardous materials regulations.

D.O.T. Proper Shipping Name: Adhesives

D.O.T. Hazard Classification: Flammable Liquid

Technical Name of Hazardous Ingredient: Petroleum Distillate

Flash Point: -14°F

Scotch-Grip High Performance Contact Adhesive 1357-NF

National Motor Freight Classification: Adhesives, NOI

The following information is provided to help you determine the proper packaging, labeling and marking in accordance with hazardous materials regulations.

D.O.T. Proper Shipping Name: Not regulated

D.O.T. Hazard Classification: Not regulated

Technical Name of Hazardous Ingredient: Not applicable

Flash Point: None

Precautionary Information:

Scotch-Grip High Performance Contact Adhesives 1357, 1357 Neutral, 1357-L

DANGER. EXTREMELY FLAMMABLE. VAPORS MAY IGNITE EXPLOSIVELY AND CAUSE FLASH FIRE. VAPOR HARMFUL. HARMFUL OR FATAL IF SWALLOWED.

Contains petroleum distillate, acetone, methyl ethyl ketone (MEK) and toluene.

Precautions: Prevent buildup of vapors. Open all windows and doors. Use only with cross-ventilation. Keep away from heat, sparks and open flame. Do not smoke or ignite any flame (such as matches, lighters, etc.). Extinguish all flames and pilot lights and turn off (and do not turn on again) stoves, ovens, all gas and electric appliances (space and water heaters, furnaces, etc.), electric motors and other sources of ignition during adhesive use and until all vapors are gone. Do not use electric light switches. Do not generate static sparks (such as walking on carpet, etc.). Use same precautions in the work area and all connected areas. Be sure that any other person in these areas understands and follows these precautions and also that a copy of these precautions is attached to any other container to which this product may be transferred. Use only in areas adequately ventilated with enough air movement to remove vapors and prevent vapor buildup. Avoid prolonged breathing of vapor. Avoid contact with eyes and skin. Keep container closed when not in use. **Keep out of reach of children.**

Suggested First Aid: Eye contact: Immediately flush eyes with plenty of water for at least 10 minutes and call a physician. **If swallowed:** Do not induce vomiting. Immediately call a physician.

Scotch-Grip High Performance Contact Adhesive 1357-NF

DANGER. VAPOR HARMFUL.

Contains 1,1,1-trichloroethane.

Precautions: Use only in areas adequately ventilated with enough air movement to remove vapors and prevent vapor buildup. Avoid prolonged breathing of vapor. Avoid breathing overspray of airborne adhesive particles during spray application. Avoid contact with eyes and skin. Do not use this product in equipment with aluminum or zinc (galvanized) parts. Contact with aluminum or zinc in a pressurized fluid system may result in explosion. Avoid vapor contact with open flames, welding arcs or other high temperature sources which can cause vapor decomposition and harmful gases. Keep container closed when not in use. **Keep out of reach of children.**

Suggested First Aid: Eye contact: Immediately flush eyes with plenty of water for at least 10 minutes and call a physician. **Inhalation:** Provide fresh air.

Important Notice To Purchaser:

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied.

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith.

No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

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Adhesives, Coatings & Sealers Division/3M
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St. Paul, MN 55144

3M

3M General Offices

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Duns No.: 00-617-3082

**MATERIAL SAFETY
DATA SHEET**



DIVISION: ADHESIVES, COATINGS AND SEALERS
TRADE NAME: SCOTCH-GRIP(TM) 1357 High Performance Contact
Adhesive

3M I.D. NUMBER: 62-1357-2631-3 62-1357-5530-4 62-1357-6530-3
62-1357-7530-2 62-1357-8530-1 62-1357-8540-0
62-1357-9530-0 62-1357-9531-8

ISSUED: JUNE 30, 1987
SUPERSEDES: NOVEMBER 7, 1986
DOCUMENT: 10-2789-5

1. INGREDIENTS	C.A.S. NO.	PERCENT	EXPOSURE LIMITS
polychloroprene polymer	N/A		N/D 5
magnesium resinate	N/A		N/D 5
zinc oxide	1314-13-2		5 mg/m3 Fume 1
TOTAL OF THE ABOVE	N/A	25.0	N/D 5
aliphatic petroleum distillate*	8030-30-6	31.0	400 ppm 1
*contains 23% n-hexane	110-54-3	10.0	50 ppm 1
acetone	67-64-1	16.0	750 ppm 1
methyl ethyl ketone (MEK)	78-93-3	11.0	200 ppm 1
toluene	108-88-3	6.0	100 ppm 1
black dye - CI Nos. 50415B and 11160	N/A	0.7	N/D 5

- SOURCE OF EXPOSURE LIMIT DATA:
1. ACGIH Threshold Limit Values
 2. Federal OSHA Permissible Exposure Limit
 3. 3M Exposure Guidelines
 4. Chemical Manufacturer Recommended Guidelines
 5. None Established

ABBREVIATIONS:
N/D - Not Determined
N/A - Not Applicable

2. PHYSICAL DATA	
BOILING POINT:	132F (acetone)
VAPOR PRESSURE:	@68F 180 mm
VAPOR DENSITY (Air=1):	3.0
EVAPORATION RATE (Ether=1):	2+
APPEARANCE AND ODOR:	Low viscosity, grey/green liquid - strong solvent odor
SOLUBILITY IN WATER:	Very slight
SP. GRAVITY (Water=1):	0.82
PERCENT VOLATILE:	Approx. 75
VISCOSITY:	200-1000 cps
pH:	N/D

Duns No.: 00-617-3082

MATERIAL SAFETY
DATA SHEET



MSDS: SCOTCH-GRIP(TM) 1357 High Performance Contact Adhesive
JUNE 30, 1987

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3. FIRE AND EXPLOSION HAZARD DATA
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FLASH POINT (Closed Cup/Petro): -14F
FLAMMABLE LIMITS - LEL: 1.0 UEL: 12.8

EXTINGUISHING MEDIA:

CO2, foam, dry chemical

SPECIAL FIRE FIGHTING PROCEDURES:

Fire fighters should be equipped with self-contained breathing apparatus when fighting fires involving this material.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Extremely Flammable. Overheated, closed containers adjacent to fire could explode due to pressure buildup.

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4. REACTIVITY DATA
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STABILITY: STABLE

INCOMPATIBILITY - MATERIALS TO AVOID:

Oxidizers

HAZARDOUS POLYMERIZATION: MAY NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

CO, CO2, HCl and smoke particles when subjected to excessive heat or flame.

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5. ENVIRONMENTAL INFORMATION
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SPILL RESPONSE:

Extinguish all sources of ignition in the area. Observe precautions in all sections. Collect spilled material and place in a U.S. Dept. of Transportation approved closed metal container.

RECOMMENDED DISPOSAL:

Commercial incineration with destruction and removal efficiency greater than 99.99% or reclamation is preferred. If incinerated, more than 99% of the hydrogen chloride in exhaust gas should be removed. Otherwise, dispose in accordance with local and current U.S. Environmental Protection Agency regulations.
U.S. EPA Hazardous Waste Number: D001 (Ignitable).

ENVIRONMENTAL DATA:

VOC: 620 grams/liter maximum Volatile Organic Compound.

3M General Offices

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6. SUGGESTED FIRST AID

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EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 10 minutes. Call a physician.

SKIN CONTACT:

Wash area with soap and water.

INHALATION:

Move affected person to fresh air at once. If breathing has stopped, give artificial resuscitation and send for medical assistance.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of milk or water. Call a physician. If spontaneous vomiting should occur, lower the person's head below the hips to prevent aspiration into the lungs. Do not give liquids to an unconscious person.

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7. PRECAUTIONARY INFORMATION

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Keep away from heat, sparks, flame and other sources of ignition. Use only in areas with sufficient ventilation to maintain vapor concentrations below the recommended exposure limits. Avoid contact with eyes and skin; wear chemical goggles and impervious gloves when handling product. Avoid prolonged breathing of vapors. Keep container closed when not in use. Keep out of the reach of children. NOTE: If product is to be sprayed, use a functioning spray booth or sufficient local exhaust ventilation to prevent vapor buildup.

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8. HEALTH HAZARD DATA
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EYE CONTACT: Liquid irritating to eyes. Can cause tearing, redness and blurred vision.

SKIN CONTACT: Acute exposure is mildly irritating. Prolonged or repeated contact will produce defatting and resultant dermatitis.

INHALATION: Inhalation of vapors at concentrations exceeding the established exposure limits may cause respiratory system irritation. Symptoms of overexposure include drowsiness, light-headedness, dizziness, nausea and headache. Repeated or extreme overexposure to toluene vapors or n-hexane may cause nervous system damage.

INGESTION: Swallowing may cause gastrointestinal irritation, nausea, diarrhea and nervous system impairment. Aspiration into the lung as a result of vomiting may cause lung damage.

NOTE: Laboratory animal feeding studies have shown potential for embryo toxic effects after long-term exposure. There is no evidence of reproductive effects associated with human exposure to methyl ethyl ketone (MEK).

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The information on this Data Sheet represents our current data and best opinion as to the proper use in handling of this product under normal conditions. Any use of the product which is not in conformance with this Data Sheet or which involves using the product in combination with any other product or any other process is the responsibility of the user.
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