MATERIAL SAFETY DATA SHEET

PRODUCT: KOOLMAT Insulation

Division of P.A. Grinnell Company
P.O. Box 985 • Mooresville, NC 28115
Phone (704) 662-9099 • Fax (704) 662-9109

Protected By KOOLMAT Insulation

1. INGREDIENTS
66% Dimethylpolysiloxane polymer (silicone)
34% Aluminum Borosilicate (fiberglass)

2. PHYSICAL DATA
Appearance: grey rubber White Vitreous Silicate Textile
Boiling Point: none
Odor: none
Vapor Pressure (MM Hg): none
Vapor Density (Air=1): none
Solubility in water: Insoluble
Specific Gravity (H20=1): 2.54
Evaporation rate: (BUTYL Acetate=1) N/A

3. FIRE & EXPLOSION HAZARD DATA
Flash Point: none - non-burning
Flammable Limits N/A LEL: N/A VEL: N/A
Extinguishing Media: N/A
Special Fire Fighting Procedures: none required
Unusual Fire & Explosion Hazards: none

4. REACTIVITY DATA
Stability:__Unstable_X_Stable
Incompatibility: none known
Hazardous Decomposition or by-products: N/A
Hazardous Polymerization: will not occur
Conditions to avoid: none known

5. HEALTH HAZARD DATA
Routes of entry: Inhalation? N/A • Skin? Possible
Eyes? Possible • Ingestion? Possible
Health Hazards (Active or Chronil); none known
Carcinogenicity: NTP? N/A, IARC? N/A, OSHA? N/A

Systems of Exposure: Continuous exposure to skin may cause minor irritation. Eye contact may cause minor physical or mechanical irratation.

Medical conditions generally aggravated by :
Exposure: none known

EMERGENCY FIRST AID PROCEDURES;
Skin - wash any material off skin with soap and cool water. If redness, itching or a burning sensation develops get medical attention.
Eyes - flush with water for at least 15 minutes. If irritation developes get medical attention.
Ingestion - if large quanities are swallowed treat simptomatically and get medical attention.

6. CONTROL & PROTECTIVE MEASURES
Respirator Protection: none required
Protective gloves: none required
Eye Protection: Safety Glasses
Ventilation: not necessary
Other protective clothing and equipment; N/A
Hygenic work practices: avoid excess contact with skin and use good personal hygiene.

7. PRECAUTIONS FOR SAFE HANDLING AND USE
Steps to be taken in case material is spilled or released: N/A
Waste Disposal Methods: Sweep and dispose of as any other innocuous mateial. Discard product as a non-hazardous waste.

Precautions to be taken in handling and storage: For maximum comfort avoid excessive contact with skin and use good personal hygiene.

Other precautions: If excessive dust is generated use respirator approved by MSHA or NIOSH for dust.

NOTE: The material in this MSDS sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. We believe that the information contained herein is current as of the date of this MSDA sheet. Since the use of this information and these opinions and the conditions of use of the product are not within control of P.A. GRINNELL CO. It is the users obligation to determine the conditions of safe use of the product.

THERMAL RESISTANCE, R (SI UNITS = $\frac{K \cdot m^2}{W}$)

	$\frac{K \cdot m^2}{W}$	$\frac{K \cdot cm^2}{W}$	$\frac{K \cdot cm^2 \cdot s}{cal}$	$\frac{K \cdot m^2 \cdot h}{kg\text{-}cal}$	$\frac{°F \cdot ft^2 \cdot h}{Btu}$
$\frac{K \cdot m^2}{W}$	1	1×10^4	4.187×10^4	1.163	5.678
$\frac{K \cdot cm^2}{W}$	1×10^{-4}	1	4.187	1.163×10^{-4}	5.678×10^{-4}
$\frac{K \cdot cm^2 \cdot s}{cal}$	2.388×10^{-5}	0.2388	1	2.778×10^{-5}	1.356×10^{-4}
$\frac{K \cdot m^2 \cdot h}{kg\text{-}cal}$	0.8598	8.598×10^3	3.6×10^4	1	4.882
$\frac{°F \cdot ft_2 \cdot h}{Btu}$	0.1761	1.761×10^3	7.373×10^3	0.2048	1

V. ACCURACY OF METHOD

The accuracy of the Rapid-k apparatus, combined with all of the global errors inherent in the method is estimated to be 4% at the two standard deviation level.

SKANDIA, Inc.

5181 Falcon Road • Rockford, Illinois 61109 • Phone 815/227-1611 • Fax 815/227-1920

Client:

Division of P.A. Grinnell Company
P.O. Box 985 • Mooresville, NC 28115
Phone (704) 662-9099 • Fax (704) 662-9109

WO #: 25866-98
Date: 10/22/98
Test Plan #:
PO #:

Aircraft:
STOCK

S/N:
NA

HORIZONTAL FLAMMABILITY TEST RESULTS

FAR 23.853 (a)

Conditioning Room: Time In: 10/21/98 9:00AM Time Out: 10/22/98 11:00AM

Specimen Desc.: P.A. GRINNELL CO.: COMPOSITE, WHITE GLASS/GRAY SILICONE, BATCH #23086

Specimen	Flame Application (Seconds)	Flame Time (Minutes)	Burn Length (Inches)	Burn Rate (Inch/Min)
#1	15	0.0	0.0	0
#2	15	0.0	0.0	0
#3	15	0.0	0.0	0
Average:		0.0	0.0	0

Comments:

Horizontal (15 sec.) Burn Test: 23.853(a) and 25.853(a) Appendix F Part I (a) (1) (v) Average Burn Rate Per Minute may not exceed 4". 25.853(a) Appendix F Part I (a) (1) (iv) Average Burn Rate Per Minute may not exceed 2.5".

Passed FAR: Yes [X] No [ ] Self Extinguished: Yes [X] No [ ]

Signed: Judy Boggs

)RtZ-763

GEIGER & HAMME, L.L.C.
Acoustical Testing
POST OFFICE BOX 1345
ANN ARBOR, MICHIGAN 48106
LABORATORIES: 3250 E. MORGAN RD.

REPORT

SOUND TRANSMISSION TEST
by
ASTM E90-90 METHOD

To: KOOLMAT/P.A. Grinnell Company

Test No. KM-1ST on samples received January 13, 1998

Specimen: 60"x 65" sample of KOOLMAT Insulation. One 0.105"-thick (nom.) flexible composite barrier panel consisting of a 0.070"-thick (nom.) cured silicone sheet with a high-temperature woven fiberglass substrate. Composite panel installed with the perimeter uniformly clamped and sealed into a wood-framed opening in a 14'x 9' STC-58 filler-wall construction. Panel weight: 18.9 lbs (0.70 PSF).

Octave-Interval Mid-Frequency (Hz)	Transmission Loss (dB)*		
f_o	$2\text{-}1/3f_o$	f_o	$2\text{+}1/3f_o$
125	7.	12.	12.
250	14.	14.	16.
500	17.	19.	20.
1000	22.	23.	25.
2000	27.	29.	31.
4000	33.	34.	37.

Sound Transmission Class (STC) = 23
per ASTM Designation E413-87

* Determined in accordance with ASTM Designation E90-90 using source and receiving rooms having volumes of 1860 cubic feet.

Harold F. Reiher
for GEIGER & HAMME, INC.
January 19, 1998

HERB CURRY INC.

P.O. BOX 753
1T. VERNON, IN 47620-0753
(812) 838-6703 fax (812) 838-6712

Invoice

DATE	INVOICE #
7/29/2004	072904-4

BILL TO

KOOLMAT Insulation
P.A. Grinnell Comapny
PO Box 985
Mooresville, NC 28115

TERMS
Net 30

SAMPLE DESCRIPTION	PO #	FAA TEST #	AMOUNT
KOOLMAT Insulation		Carbon Monoxide Draeger Tube Test	

DRAEGER TUBE SMOKE TOXICITY TEST

SAMPLE IS PLACED IN AN ASTM E-662 SMOKE CHAMBER, MOUNTED VERTICALLY, IN FRONT OF A HEATER WHICH HEATS THE SAMPLE TO 2.5 KW/SQUARE METER (ABOUT 1000 DEGREES FARENHEIT). SMALL FLAMES ARE IMPINGING ON THE BOTTOM FACE OF THE SAMPLE. AFTER FOUR MINUTES IN THE CHAMBER, THE FLAMES ARE MOVED AWAY, AND THE TOTAL AMOUNT OF CARBON MONOXIDE PRODUCED BY THE SAMPLE IS MEASURED USING A DRAEGER TUBE DETECTOR.
THIS TEST IS USED BY BOEING FOR ALL MATERIALS ON THE INSIDE OF COMMERCIAL AIRPLANES. THE LIMIT SET BY BOEING FOR CO IS 3500 PPM.
THE KOOLMAT PRODUCED ONLY 100 PPM. THIS IS VERY GOOD

Herb Curry
07/29/04

	Total

Satisfy Your Burning Desires

Thank You