HAWKEYE
INTERNATIONAL, LTD.

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HAWKEYE
RUBBER PRODUCTS

In our efforts to provide the highest quality of non-metallic raw materials for aerospace, aircraft, and other industry, we are proud to offer a full line of Rubber and related products.

HAWKEYE has been a leader in the non-metallic raw materials market for over a decade, specializing in Films, Release Fabrics, Breathers, Bleeders, Tapes and specialized Plastics. Our introduction of a high quality rubber products line offers availability and service over the entire spectrum of non-metallic raw materials.

Furthermore, we are constantly striving to grow with the industry and to improve the state of the art materials to meet your strictest technical requirements.

If you have any questions or requests regarding materials (whether listed in the brochure or not), please talk to your local distributor or call us direct.

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DATA SHEET

CAULPAD
NON-SILICONE PRESSURE PAD - UNCURED

Caul Pad is uncured synthetic rubber designed to replace silicone pressure pads. Caul Pad will operate at the same temperatures as silicone rubber. The material is not attacked by epoxies and there is no silicone contamination problem.

FUNCTIONS

Evenly distributes pressure over the part minimizing voids and honeycomb core crush.

Eliminates wrinkles in plastic parts

APPLICATION

1. Lay the uncured Caul Pad directly over the part, To insure release, spray or wipe on two (2) coats of Release Solution in opposite directions on both sides of the Caul Pad. Use a silicone base release solution. One applications of Release Solution will last from 10-20 cycles.

2. The first cure should be in an autoclave. Pressure of 85 psi for one hour at 350 degrees F (176 degrees C).

3. Caul Pad will cure, taking a permanent set to the shape of the part. once cured, Caul Pad will operate in excess of 100 cycles at 350 degree F autoclave cures.

SPECIFICATIONS

Maximum Use Temperature:	450 Degrees F (230 Degrees C)
Standard Thickness*:	1/16 inch (.0625)
Standard Roll Size:	54" Wide X 50 Feet
Weight per Standard Roll:	90 Pounds (41 Kg)
Cycles After First Cure:	Over 100 at 350 Degrees F (176 degrees C)
Yield 4 1/16 Inch:	.4 pounds per square foot

* Other thickness' available on special request.

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HAWKEYE SOLID SILICONE RUBBER

HAWKEYE's line of solid Silicone Rubber Products provide high and low temperature stability, from -105°F to +600°F. Our silicone products can be compounded to meet your strictest requirements of compression resistance, tensile strength, tear resistance, elongation, resistance to aging, ozone, sunlight, many common oils, fuels and chemicals.

Materials are available from 15 to 80 durometer in thicknesses from .008" to .500". HAWKEYE Rubber Products can be supplied as calendered rolls, molded sheets, extrusion and molded parts. Our fabrication capabilities include pressure sensitive adhesive backed (damming), slit widths, spliced vacuum blankets and custom fabricated parts.

Other Silicone Specialties: .

- AIRCRAFT SEALS
- VITON®
- FLUOROSILICONE
- CONDUCTIVE SILICONE
- HOSE & TUBING
- EMI/RFI SHIELDING

®VITON is a registered trademark of Dupont

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DATA SHEET

HAWKEYE SILICONE SPONGE

Complimenting our solid silicone line is our line of Silicone Sponge Products. These materials show the same high and low temperature stability as our solid silicones (-100°F to +500°F). Silicone Sponge offers superior compression set resistance, low moisture absorption, good chemical resistance and excellent release properties.

Applications include aircraft/aerospace, noise reduction, vibration damping, sealing, insulation, thermal shielding and gasketing. Material is available in molded sheets 36”x36", of thicknesses from .062" to .500". HAWKEYE Silicone Sponge can also be pressure-sensitive backed, slit to width and custom fabricated.

Other Silicone Sponge Specialties:

- SILICONE SPONGE CORD
- CUSTOM SILICONE SPONGE EXTRUSIONS
- MOLDED PARTS
- EMI/RFI SHIELDING.

Please see our Specification Guide for technical and specific physical properties.

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HAWKEYE ORGANIC RUBBER PRODUCTS

HAWKEYE's line of quality Rubber Products includes the full spectrum of organics. Commercial and specification-grade materials are available as solid, sponge, calendared, molded parts and extrusions.

Polymers:

NEOPRENE	**SBR**
BUTYL	**VITON**
NITRILE/BUNA	**EPDM**
HYPALON	**NATURAL/PURE GUM**
CORK & RUBBER	**URETHANE**

These materials are available in a full range of durometers, thicknesses from .010", widths up to 60", and smooth or fabric-impression finish. Custom compounding is also available.

Specialties:

STRIPPING
EMI/RFI SHIELDING
DROP HAMMER PADS
CLOSED CELL SPONGE
ADHESIVE BACKED
OPEN CELL SPONGE
HOSE & TUBING
FABRIC INSERTED
PRESS PADS
BEARING PADS
CUSTOM FABRICATED PARTS

Specifications and/or physical properties are available upon request.

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DATA SHEET

SILICONE-COATED FABRICS

HAWKEYE offers a full line of fabric inserted and silicone rubber-coated materials, for a variety of applications.

Fabrics of Fiberglass, Mylon, Dacron, and Nomex are used to give additional strength and durability to standard and custom silicone products. Standard products are 36" wide and range in thickness from .010" to .125".

Applications include press pads, gaskets, thermal barriers, tape, heat tunnel curtains and conveyor belting.

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DATA SHEET

NATURAL RUBBER GRADE "HR"

Grade "HR" is a heat resistant sheet formulated to retain strength and elasticity at temperatures up to a maximum of 320 degrees F (160 degrees C).

Grade "HR" is especially suitable for use as vacuum blankets for composite moldings and for bonding laminates where a heat cure or hot-melt adhesive is employed.

SPECIFICATIONS

Thickness:	.015" to .120" (0.38mm to 3.0mm) +/- 10% tolerance
Maximum Width:	13 ft (4 metres)
Color:	Dark Grey
Typical Properties:	
Tensile Strength:	3,555 lbs/sq. in (250 kg/cm2)
Modulus at 500% extension:	426 lbs/sq. in (30 kg cm2)
Elongation at Break:	800%
Hardness (shore micro)	50 degrees +/- 5%
S.G.	0.95
Max. Recommended Working Temperature:	320 degrees F (160 degrees C)
Tensile Strength Retention After 4 Hours at 248 degrees F (120 deg. C)	86%
Tensile Strength Retention After 4 Hours at 320 degrees F (160 deg. C)	33%

TYPICAL APPLICATION

- Vacuum Blankets for Composite Moldings
- Vacuum Blankets for Bonding Laminated Structures Where Heat is Involved
- Vacuum Blankets for Laminating Fabrics and Veneers to flat and Contoured Shapes Where Hot-Melt Adhesives are used.

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DATA SHEET

NATURAL RUBBER GRADE "S"

Grade "S" is a quality general-purpose sheet with good transparency in natural color. All ingredients used in the formulation for Grade "S" natural color and white satisfy the requirements in type and level of USA F.D.A. CRF 21, section 1-77.2600 "Rubber Articles for repeated use in contact with foodstuffs", except two; one of these exceptions is allowed under the German regulation BGA XXI Category I and the other under BGA XXI Special category.

SPECIFICATIONS

Thickness:	.008" to .060" (0.2mm to 1.5mm +/- 10% tolerance)
Maximum Width:	13 ft. (4 meters)
Colors:	Natural, White, Black, Red, Blue and other colors to order.
Typical Properties:	
Tensile Strength:	3,270 lbs/sq. in.. (230kg/cm2)
Modulus at 500% extension:	355.5 lbs/sq. in. (25kg/cm2)
Hardness (shore micro):	35 degrees +/-5
S.G.	0.95
Maximum recommended working temperature	176 degrees F (80 degrees C)

TYPICAL APPLICATIONS

- Vacuum blankets for composite moldings, bonding laminated structures and laminating decorative materials to complex shaped structures, etc.
- Bakery release film
- Cut diaphragms, seals and gaskets
- Flexible valve diaphragms and flexible connections
- Surgical straps and tourniquets

The physical properties above are typical values abstracted from tests carried out in accordance with BS903, parts Al**,** A2, and A26.

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DATA SHEET

NATURAL RUBBER GRADE "B" AND GRADE "B" ANTI-STATIC

Grade "B" is a higher modulus sheet than Grade "S" with good stretch and recovery. Grade "B" is especially suitable for use as vacuum blankets and release membranes where the temperature does not exceed 212 degrees F (100 degrees C). Grade "B" Antistatic is formulated to reduce the possibility of static charge build-up especially when used on glass vacuum tables.

SPECIFICATIONS

Thickness:	.030" to .120" (0.75mm to 3.Omm) +/- 10% tolerance	
Maximum Width:	13 ft. (4 meters)	
Colors:	Natural Black (Antistatic grade in black only)	
Typical Properties:	Grade "B"	Grade "B" Antistatic
Tensile Strength	2844 lbs/s.i. (200 kg/cm2)	3270.6 lbs/s.i. (230 kg/cm2)
Modulus @ 500% extension:	427 lbs/s.i. (30kg/cm2)	711 lbs/s.i. (50 kg/cm2)
Elongation at Break:	800 %	800%
Hardness (shore micro):	40 degrees +/- 5	50 degrees +/- 5
S.G.:	0.95	0.95
Maximum recommended working temperature:	212 degrees F (100 degrees C)	212 degrees F (100 degrees C)

TYPICAL APPLICATIONS

- Vacuum blankets for silk-screen print down machines.
- Vacuum blankets for composite moldings
- Vacuum blankets for bonding laminated structures such as motorhomes and insulated container panels.
- Vacuum blankets for laminating fabrics and veneers to flat and contoured shapes
- Release membranes when press molding cement based roofing and cladding panels.

The physical properties above are typical values abstracted from tests carried out in accordance with BS903, parts Al, A2 and A26.

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DATA SHEET

ADHESIVES FOR BONDING LATEX RUBBER SHEET

ADHESIVE TYPES

Two types of adhesive are suitable for bonding natural latex rubber sheet to itself.

SOLVENT based adhesives (rubber solution adhesives).
WATER based adhesives (Latex adhesives),

Solvent based adhesives have the advantage of drying quickly but the solvent will tend to cause the Latex sheet to curl up. Solvent based adhesives are highly inflammable and must be used with proper ventilation. When used correctly, solvent based adhesives provide an excellent bond with good water resistance.

Latex adhesive, being water based, are safe to use and do not cause any curling of the Latex sheet, The adhesive takes longer to dry but when used correctly Latex adhesives will provide a good bond but may not stand up to immersion in water.

PREPARATION

An adhesive bonded join will only be as good as the prepared surface will allow. Before applying a film of adhesive, the surface should be thoroughly cleaned to remove dusting powder and surface film. Water, or solvent cleaners as recommended by the adhesive manufactures are suitable cleaning fluids but chlorinated solvents such as trichlorethylene should not be used as these will harm the Latex rubber.

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The following procedure is recommended:

1. Wipe off any excess dusting powder.
2. Clean the two surfaces to be bonded with water or cleaner. Solvent cleaner will tend to distort the Latex rubber sheet, so use sparingly and the sheet will flatten out again as the solvent evaporates.
3. Allow the sheet to dry completely.
4. Apply a thin film of adhesive to both surfaces.
5. Allow the adhesive to dry completely and any distortion caused by solvent based adhesive to disappear.
6. Join the surfaces and apply slight pressure.
7. Allow 24 hours for the bond to fully develop.

NOTE: Always follow the manufacturers warnings and instructions when using any adhesive or solvent cleaner product.

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DATA SHEET

ADDITIONAL PRODUCTS

CUT SHEETS

We supply sheets cut accurately to customer's individual requirements.

DIE-CUT SHAPES

We specialize in cutting shapes from our latex **rubber** sheet and offer a prompt service in cut latex washers, gaskets, diaphragms and seals.

CUT STRIPS

We slit our latex rubber sheet into coils of strip down to 3/4" (20mm) width.

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DATA SHEET

HK 1324 A/B CURING SILICONE

HK1324 A/B is a room temperature vulcanizing silicone rubber intended primarily for making molds, but is also used as a general purpose, high strength rubber. HK1324 A/B is inhibition-cure free with excellent resistance to oil clays. HK1324 A/B offers excellent physical properties with high tear resistance. Ease of pouring is achieved due to the low viscosity. HK1324 A/B produces a mold with a long working life.

SPECIFICATIONS OF UNVULCANIZED MATERIAL

Color:	Blue
Viscosity @ 77°F (25°C)	50,000 cps
Shelf Life:	6 Months

SPECIFICATION OF CURED RUBBER

Specific Gravity:	1.10
Hardness:	22
Tensile Strength:	520 psi
Elongation at Break:	310%
Tear Resistance:	100

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DIRECTIONS FOR USE

HK 1324 A/B

HK1324A is processed by adding curing agent B. The addition of 10% catalyst (by weight) has a pot life of 1 to 1 1/2 hours. HK1324 A/B has a trace of pigment for good dispersion and is ready for de-molding after 15 to 20 hours.

After the mold has been removed from the master, it should be let for 24 hours in order to develop the maximum mechanical strength.

When using urethane foam molds, there is less distortion. HK N1324 B is a 5% catalyst used to create a firmer material. HK N1324 B is also used for large rubber molds, and the thicker viscosity needed for brush-on rubber molds.

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DATA SHEET

SILICONE RUBBER SHEETING

Hawkeye International offers a complete selection of cured and uncured calendered silicone rubber sheeting. The high-strength compounds, available with a light fabric finish, are unsurpassed in vacuum and pressure bagging performance. The commercial grade compounds are available in a wide selection of hardnesses and thicknesses. These compounds are used in pressure-intensifier and gasket applications not requiring high strength properties.

Extruded silicone rubber shapes, used for seals, pressure intensifiers and tube-bonding bladders are also available.

SPECIFICATIONS

	HK78	HK80	HK81
Hardness (Shore A)	30	50	48
Tensile strength (psi)	1500	1400	1178
Tear strength (ppi)	207	250	230
Modulus (psi) - (300% elongation)	290	600	419
Elongation at break (%)	900	650	800
Specific gravity	1.10	1.15	1.13
Compression set (%) (22 hrs @ 350°F)	17	21	49

TO ORDER, PLEASE SPECIFY THICKNESS, WIDTH & LENGTH

Thicknesses: 030" .063" .085" .125"

Widths: 36" 48" 54"

For non-stock items, minimum order is 50 lin. feet --- Seamed blankets available in any width Material sold per square foot

SILICONE RUBBER

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HK78 LOW MODULUS HIGH STRENGTH SILICONE RUBBER

- High-strength elastomer formulated specifically for vacuum bagging
- Incredible elasticity and conformance
- 400°F (204°C) rated continuous
- Available cured & uncured
- Clear formulation available for low-temperature processes (special order)

HK80 HIGH-STRENGTH SILICONE RUBBER

- 400°F (204 °C) rated continuous
- Outstanding low compression set properties
- Available cured and uncured
- High Strength elastomer formulated specifically for vacuum bagging
- Exceptional elongation and tear strength properties

HK81 TRANSLUCENT HIGH-STRENGTH SILICONE RUBBER

- High-strength translucent compound formulated specifically for vacuum bagging
- Exceptional elongation and tear strength properties
- 375°F (191°C) rated continuous
- Available cured and uncured

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DATA SHEET

COMMERCIAL GRADE SILICONE RUBBER

HK82 and HK83 are commercial grade silicone rubber compounds that meet the requirements of Mil-R-5847D and ZZR-765-C, Class IIA and IIB; AMS 3302 and AMS 3303. They are formulated specifically for pressure distribution pads, shock absorption, gaskets, and items not requiring high tear strength. HK82 is gray with a light fabric finish and is available in 50 and 60 durometer. HK83 is red with a smooth, matte finish and is available in 40, 50, and 60 durometer.

SPECIFICATIONS

	40 Durometer	50 Durometer	60 Durometer
Hardness (Shore A)	42	51	60
Tensile strength (psi)	1020	1080	1130
Tear strength (ppi)	56	63	58
Modulus (psi) (100% elongation)	150	280	460
Elongation at break (%)	450	350	300
Specific gravity	1.11	1.16	1.21
Compression set (%) (70 hrs @ 302°F)	15	18	16

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INSTRUCTIONS FOR FABRICATING AND CURING CONTOURED DIAPHRAGMS FROM UNCURED HIGH-STRENGTH SILICONE RUBBER HK78, HK80, AND HK81

PREPARATION OF THE LAY-UP TOOL

1. The lay-up mandrel or mold can be made from sheet metal (preferably aluminum) solid metal, or an actual production composite part or mold. It should be inspected for smoothness and cleaned with solvent. Keep in mind that whatever you use, it must be able to withstand 300°F (148°C).

2. If the mold has gaps or seams, these must be covered over with aluminum tape to prevent the silicone from being forced into these areas. Fillets made from RTV silicone must also be covered to prevent the diaphragm from bonding to them.

3. During the cure, you can expect the silicone to shrink approximately 3%. You may have to build up or lengthen the mold in areas and increase the mold flange to accommodate this. The amount of shrinkage on a large mold can be surprising.

4. The mold should be evenly coated with a release agent (Teflon® or silicone release agent).

5. If a production composite article is used as the mold, keep in mind that uncured silicone will contact and transfer to the part surface. To prevent this, you may want to cover the surface of the part with some type of protective layer such as Halar or Teflon®.

LAYING UP THE DIAPHRAGM

1. Rolls of uncured silicone should be removed from refrigerated storage and allowed to come to room temperature.

2. Unroll the silicone sheet as per the instructions provided with the roll. After unrolling, one side of the silicone will be exposed and the underside will have a layer of polyethylene still attached.

3. Cut the uncured sheet to give a minimum of waste and seams. Patterns made from paper or plastic film can help.

Note: Finger nails should be clipped short and all jewelry removed, including watches, prior to laying up the uncured silicone. The silicone sheet has the consistency of modeling clay and is easily damaged.

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4. Lay the uncured sheet onto the mold with the exposed side down. Work from one edge of the piece and use very gentle hand pressure to remove any air that may be trapped under the sheet. Remove the layer of plastic film and rub gently with a double layer of clean nylon fabric (such as peel-ply) to mold the silicone into place. You may find that it is easier to move the plastic film before placing the sheet in areas of moderate to severe contours and use the nylon fabric for all stages of molding. Using a double layer allows the outer layer to glide over the layer which is pressed against the silicone sheet.

5. Joints or seams can be overlapped or butt-joined. An overlap is usually preferred for strength and vacuum integrity. The overlap can be skived or feathered using a small spatula. Blend the joints using plenty of pressure so that the silicone joins properly during the cure process.

6. Additional layers can be applied to areas of extreme contours or over radii where the sheet may have been thinned. Use the same procedure to remove air that may be trapped between the layers. A hypodermic needle can be used to facilitate air removal. Smear the uncured silicone to fill in and cover the needle hole.

7. When the lay-up is completed, check it to make sure there are no areas of foreign matter or seams that have not been feathered. Check for indentations and fill as necessary.

PREPARATION FOR CURE

If you have a nitrogen-charged or steam autoclave, you can cure the lay-up without having to vacuum bag it. This curing method will provide the most satisfactory results, If you cure the lay-up in an air-charged autoclave without vacuum bagging it, the outer surface will not fully cure and remain soft and gummy. This may be all right for your application. Curing the lay-up in an oven without using vacuum pressure will result in a diaphragm with blisters and bumps, not to mention the soft, partially cured surface.

If you do not have access to an autoclave, you can vacuum-bag the lay-up and cure it in an oven.

1. Cover the entire lay-up with a layer of release cloth or film. This prevents the silicone from being embedded in the bleeder fabric during cure.

Do not use nylon bagging film as a release film. It will bond to the silicone.

2. Place a layer of breather fabric over the lay-up.

3. Position any vacuum probes or thermocouples. Bag the entire lay-up with suitable nylon film and seal with sealant tape.

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4. Apply 24 to 25" Hg vacuum to the lay-up. Verify the integrity of the seal with a vacuum gauge.

CURING THE LAY-UP

1. Place the tool in the autoclave or oven. If it is an oven cure, be sure to maintain vacuum pressure.

2. Cure the silicone for at least 30 minutes at 300°F (148°C). Time the cure cycle after the mold lay-up reaches 300°F. If an autoclave is used for external pressure, 60 psi is usually sufficient. For lay-ups that are thicker than 1/8", cure an additional five minutes for each extra 1/8" of thickness.

3. Allow the lay-up to cool to room temperature before removing it from the mold. Inspect the diaphragm for any areas that may be thin and add extra silicone to these areas. Repeat the bagging and curing procedure for these repairs if necessary.

4. Remove the blanket from the tool and place it in an air-circulating oven for 3 hours at 400°F (204°C). During the post cure, do not allow silicone surfaces to touch. Use clean fiberglass cloth as a separator. After post-cure and cooling, the blanket is ready for use.

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BONDING THE COMPONENTS

FRAME PREPARATION

1. Clean the frame with a suitable solvent or cleaner. Pay particular attention to the side of the frame to which the diaphragm will be bonded.

2. Abrade the banding surface of the frame with a disc or belt sander and 60 to 100 grit media.

3. Using a clean, lint free rag, apply a thin, even coat of primer to the abraded surface of the frame and allow to air dry at least 10 minutes.

BONDING THE DIAPHRAGM

1 . Trim the diaphragm so it's slightly larger than the frame.
2. Clean the diaphragm where it will be bonded to the frame using acetone or MEK.

Tools being used in an autoclave will blister unless special precautions are taken when bonding the diaphragm to the frame to eliminate air entrapment. One way to prevent this is to put a large bead of adhesive along the center of the frame bonding surface and place the frame onto the diaphragm, clamping the frame down so that the adhesive squeezes out along the inside and outside edge of the frame. Be sure to clean up the excess adhesive before it begins to set up. If there is not enough adhesive, let the assembly dry for 2 to 3 hours and fill the unbonded areas with adhesive. Apply pressure and clean off the excess adhesive.

Instead of a large, flat surface or matching mold as a clamping surface, you can also use 2' to 2..5" wide strips of .25" Masonite or plywood as clamping strips. These allow you to place the frame upside down, apply the adhesive, place the diaphragm, and clamp the diaphragm to the frame. Don't forget to turn the assembly right side up to clean off the excess adhesive before it sets up.

For tools being used with vacuum only, the adhesive can be spread out before the diaphragm is clamped to the frame.

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BONDING THE SEAL

1. Clean the seal with acetone or MEK, Be careful not to pull on the seal as it will stretch and become oversized. Simply wiping the bonding surface of the seal will suffice.

2. The seal is bonded to the diaphragm so that the inside edge of the seal is flush with the inside edge of the frame. Clean this area of the diaphragm with acetone or MEK. Since you can't see the inside edge of the frame while placing the seal, measure from the outside edge of the frame to the outside edge of the seal to check for correct placement. Place the seal and make sure it's sized correctly. If it is too long, compress the seal to fit. If it is too short, stretch the seal slightly.

3. After checking for a correct fit, make reference marks along the outside edge of the seal on the diaphragm. A standard ball point pen works well. Move the seal inboard of where it is to be bonded so that it is ready to place when the adhesive is applied.

You may want to work on one section of the seal at a time until you get a feel for how long it takes the adhesive to set up and how long it takes you to apply adhesive, locate the seal, apply pressure, and clean up.

4. Apply a 1/8' dia. bead of adhesive to the diaphragm about 3/8' in from the reference marks you made earlier. This will bias the adhesive to the inside edge of the seat when you place it.

5. Place the seal onto the adhesive, being careful to align the seal with the reference marks. Once you've placed the seal, begin on one and by grasping the sealing leg of the seal and pressing down. Using the proper technique, adhesive will squeeze out along the inside edge of the seal. Work your way down along the entire length of the bonding area. Follow up by pressing down on the bonding leg of the seal with a spatula or some type of bar. As with the diaphragm, if you don't got squeeze out everywhere, come back later and fill it. Clean off the excess adhesive before it sets up. Allow the seal to cure for at least 3 hours before handling. Allow to cure overnight before using.

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VACUUM PROBE INSTALLATION

1. Determine the location of the vacuum port(s). They are typically located 1.75" in from the inside edge of the frame, usually in the corner.

2. Cut a 1/4" diameter hole in the diaphragm using a saddlers or arch punch (or the sharpened end of a metal tube).

3. Clean the diaphragm and probe components, including the gasket, with acetone or MEK. The probe should be disassembled.

4. Pick up the probe top by the pipe (tapered) thread end and apply a small bead of adhesive on the flange area around the threads on the opposite side. Set this down and pick up the base, tapered side up. Apply a small bead of adhesive on the flat face of the tapered side of the base, encircling the hole. Place the adhesive side down onto the gasket and lift the gasket up. The final adhesive step is to place another bead of adhesive on the gasket, encircling the hole in the middle and spaced out from the edge of the hole about 1/4".

5. With the diaphragm supported so that the vacuum port hole is accessible from both sides, grasp the vacuum probe top and press the straight-thread portion (the side with the adhesive) into the 1/4" hole made earlier. Make sure the probe top is on the frame side of the diaphragm. With the threads sticking through the diaphragm, grasp the probe base (with gasket) and screw it on (the milled slots should be out), hand tight. Finish by pressing on the base to stretch the diaphragm out slightly and hand-tightening the top. Clean off the excess adhesive. Allow to dry for three (3) hours.

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DATA SHEET

SILICONE
HIGH TENSILE, HIGH TEAR STRENGTH

VACUUM FORMING MATERIAL

ASTM - Test Slab Results

COMPOUND - STOCK #	HK1455	HK1555	TEST METHOD
Hardness Pts "A"	38-48 Ave. Range	50-58 Ave. Range	ASTM D-2240
Tensile Strength, PSI	1300 minutes	1350 minutes	ASTM D-412
Elongation - %	800	700	ASTM D-412
Tear Strength, ppi	280	210	ASTM D-624
Compression set, % (22 hrs @ 350°F)	30	45	ASTM D-395
Specific Gravity	1.13	1.15	ASTM D-297
Standard Color	Red/Gray	Red	
Standard Sheet Finish	Smooth	Smooth	

NOTES:

1. Grade 55 materials are designed for cal. sheet for use as a reusable vacuum membrane application and applications where high tensile strength and good tear properties are a concern.
2. All test results and the physical property requirements on this data sheet are based on results obtained from molded ASTM test slabs.
3. Due to the manufacturing process used, the tested results on the actual finished material may vary from original lab results.
4. Hawkeye International cannot guarantee cycle life or the suitability of those materials in a given vacuum application.

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DATA SHEET

HK37 A/B
RTV HIGH TEMPERATURE CASTING COMPOUND

HK37 A/B is a two part modified RTV compound designed for use as a flexible molding material for embedding, electrical applications and thermal expanding tools. The controlled coefficient of thermal expansion makes HK37 A/B an ideal material for casting pressure pads and advanced composite tooling rubber.

SPECIFICATIONS

UNCURED COMPOUND

Base to Curing Agent Ratio:	100 Parts A to 12 Parts B	
Color:	Base (Part A):	Tan
	Curing Agent (Part B):	Blue
Viscosity at 77°F (25°C)	150,000 cps	
Mixing Ratio A/B:	10/1	
Shelf Life:	6 Months	

CURED COMPOUND - Cured 24 Hours @ 77°F (25°C)

Specific Gravity:	1.25
Durometer - Shore A: (ASTM D2240)	60 +/- 5
Tensile Strength (PSI): (ASTM D412)	750 psi
Elongation %: (ASTM D412)	175
Tear Strength (PSI): (ASTM D624)	75%
Heat Resistance:	450°F (230°C)
Thermal Conductivity BTU - FT F:	1.5
Coefficient of thermal expansion In/In/°F:	10.5×10^{-5}

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HK37 A/B
RTV HIGH TEMPERATURE CASTING COMPOUND

MIXING INSTRUCTIONS:

The base and curing agent are mixed just before using. Mix 10 parts base to 1 part curing agent by weight. Automatic mixing equipment or manual mixing may be used to combine base and curing agent. Immediately after mixing, place the material in a vacuum chamber to remove trapped air. As the vacuum is drawn, the material will expand as much as four times its original volume. After 1 - 2 minutes, the material will recede to its original volume. Remove from vacuum chamber.

INHIBITION:

Certain materials will cause inhibition or neutralization of the curing agent. These materials are sulfur containing organometallic salt containing compounds such as organic rubbers and many condensation cure RTV chloride solvents - amines. Inhibition may easily be determined by brushing a small quantity of Silcast 37 A/B over a localized area of the surface to be reproduced. If the HK37 A/B is gummy or uncured after the curing time, then you know the mold surface is acting as an inhibitor.

CURING CHART:

Temperatures	Pot Life	Cure Time	Shrink %
32°F (0°C)	48 Hrs	----	----
77°F (25°C)	1 Hr	24 Hrs	0
100°F (38°C)	30 Min.	2 Hrs	0.3
150°F (65°C)	10 Min.	30 Min.	0.5
300°F (149°C)	---	5 Min	1.0

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DATA SHEET

HK50CG COMMERCIAL GRADE
50 Shore "A"

Commercial Grade silicone sheeting is designed to be used in applications where physical properties are not critical but extreme temperature resistance is still needed. Material is available in 25-80 durometer in many colors. Sheet thickness ranges from /010" to 1" thick. Available width is up to 75" wide. Call customer service for many other variations of this material.

HK50CG is an excellent gasketing material. It offers extreme high and low temperature resistance. It is UV and ozone resistant. HK50CG is non-toxic and chemically inert. It is fungus resistant.

PHYSICAL PROPERTIES

	Test Method	Typical Properties
Specific Gravity, G/CC	ASTM D297	1.45
Durometer, Shore "A"	ASTM D2240	50 +/- 5
Tensile Strength, psi	ASTM D412	600
Elongation, %	ASTM D412	300
Tear, psi Die "B"	ASTM D624	80
Temperature Range	(°F)	-103 - +450 °F (+500 Intermittent)