

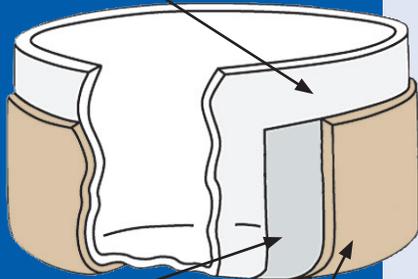
# ACE

For Glass Vessels

# Instatherm<sup>®</sup>

## The Safest Heating Method!

Borosilicate Glass



Fused-to-Glass Conductive Heating Film

Integral Outer Insulation

**Eliminate the need for heating tapes, immersion heaters and heating mantles.**

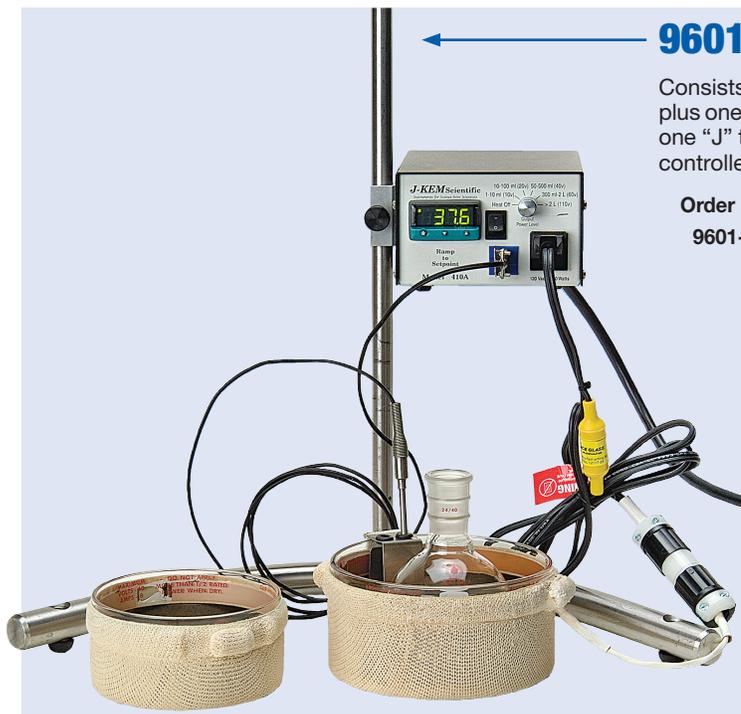
Instatherm<sup>®</sup> is a safer, more precise heating method for the laboratory. It is an Ace Glass proprietary process that fuses a noble metal alloy coating directly onto the glass surface. Once the insulating and protective covering is applied, the Instatherm<sup>®</sup> electrical circuit provides the most rapid and precise heating method available. Thermal lag is minimal with no hot spots. When placed on a magnetic stirrer, it becomes the best heating and mixing combination on the market. Because Instatherm<sup>®</sup> is a process more than product, it can be adhered to any glass vessel. This brochure features our standard vessels for your convenience. However, custom application inquiries are most welcome.

**ACE Instatherm<sup>®</sup> —  
heat with confidence...  
save time...eliminate  
hotspots!**

- *Rapid, even heat — low thermal lag*
- *No super-heating*
- *Suitable for magnetic stirrers*
- *Extremely accurate heating*
- *More precise than mantles*
- *Accommodates variety of vessel sizes and shapes*



 **ACE GLASS**  
INCORPORATED



### 9601-355 Bath Kit

Consists of one each 9601-14 and 9601-16 bath, plus one 12324-25 digital temperature controller with one "J" type temperature sensor, two clips, and two controller cords. Stand not included.

Order Code  
9601-355

# ACE Instatherm® Oil Bath/Controller Kits

For 120v  
Baths

### 9601-335 Bath Kit

#### Economy

Consists of one 9601-16 bath plus one 12125-14 economy temperature controller, one 9601-30 clip, and one 12110-17 type "J" thermocouple temperature sensor, and controller cord. Stand not included.

Order Code  
9601-335



**Bath Kits  
for your  
convenience**

For All Size  
Baths



### 9601-352 Bath Kit

Consists of one each 9601-12, 9601-14 and 9601-16 baths, three 9601-30 clips, three 9698-16 cords, plus one 12324-25 J-Kem digital temperature controller with "J" type temperature sensor and controller cord. Stand not included.

Order Code  
9601-352

Also available with extended 12-foot permanent controller cord baths:

Order Code  
9602-364

## ACE temperature controllers are compact, bench- or rack-mountable...

■ Programmable, tunable, and adaptable to your needs

### 12324 Digital-Type Temperature Controller

Designed Especially For Instatherm®

The J-Kem Model 410 is designed for heaters that cannot be operated as high as 120VAC, such as some styles of Instatherm® oil baths. Maximum output voltage of the Model 410 is selected using the power output knob on the front of the controller. Selectable output voltage limit provides precise power and temperature control while protecting low voltage heaters. Comes complete with USB port and data logging and control software. Power control computer provides 0.1°C regulation. Output Power: 10, 20, 40, 60, 120 VAC; Electrical input: 120 VAC, 10 amps, 1200 watts.

Size: 3.25H x 5.25W x 7.25D inches;

Weight: 3 lbs.

Warranty: 1 year

J-Kem Model	w/Sensor Cord and Adapter	Temperature Range (°C)	Thermocouple Type	Order Code
410-T-S	Yes	-200 to 250	T	12324-23
410-J-S	Yes	0 to 800	J	12324-25
410-K-S	Yes	-50 to 1200	K	12324-27



12324

### 12125-14 Economy Temperature Controller



Economy temperature controller with "J" thermocouple input; output power 120 volt/60 Hz, 15 amp maximum. Portable or bar mountable. 120 volt/60 Hz input. Single-loop time proportional output: 10 seconds cycle rate. Solid state relay control contact.

Temperature range varies by sensor type. 0.1°C resolution. Accuracy over range: 0.25% (maximum 2°C). Set-point control accuracy: ± 0.1°C. Microprocessor-based 1/32 DIN module, dual process and set-point value display. Auto-tuned PID with fuzzy logic. Programmable: ramp and soak (16 segment). **Bath must be 120V compatible.**

Size: 2H x 5.25W x 5.25D inches;

Weight: 2 lbs, 2 oz.

Warranty: 3 years

Temperature Range (°C)	Thermocouple Type	Order Code
0 to 800	J	12125-14
-200 to 250	T	12125-16
-50 to 200	K	12125-18

### 13470 STIRRER, Talboys Advanced Series

Talboys Advanced series magnetic stirrer with either a ceramic or aluminum top. Microprocessor controlled with analog speed knob. Speed range 60-1600 rpm. The new low-profile design makes it easier to place under reactors like our Ace photochemical reactor vessels. PTFE stir bar included. Accessory support rod kit available on request. 120v (230v available). CE, UL and CUL approved. Two-year manufacturer's limited warranty.

Top Size, In.	Capacity, mL	Top	Order Code
4x4	600	Ceramic	13470-10
4x4	600	Aluminum	13470-14
7x7	2500	Ceramic	13470-16
7x7	2500	Aluminum	13470-18



13470

CE UL CUL approved.

## ***Ace Instatherm®-heated glass oil baths, for use with time-proportional temperature controllers, offer safety and efficiency***

- No exposed-coil heater for greater safety
- Rapid, even heat with low thermal lag
- Suitable for magnetic stirrers

**Low Form Instatherm® Baths**  
Allows small mini-lab size flasks to be stirred internally with magnetic stirrer bars while being heated in baths



9601-16

### **9601 INSTATHERM® OIL BATH, Low Form**

Low form, glass open vessels coated with Instatherm®. Designed to operate up to 250°C, heating response time is very rapid, (5° per minute), with very low thermal lag. The bottom is uncoated so the bath can be put on any popular magnetic stirrer for stirring while heating. Baths are designed to run with oil or a heating media. Never run Instatherm® baths dry or breakage can occur, especially at higher temperatures. Capacity is without a vessel. Three-prong connector plug is designed to work with Ace temperature controllers where the output voltage can be automatically limited to match the bath. Bath can also be matched with ACE temperature thermocouple sensors for complete automatic operation. If using another type temperature controller, voltage should not exceed the rated voltage (see below). Complete item includes clip for sensor and/or thermometer. Integral six-foot controller cord.

Approx. (mm) I.D. x O.D. x Hgt.	Capacity, mL	Volt/Amp Rating	Bath & Cord	Complete w/Clip
			Order Code	Order Code
64 x 70 x 50	160	20/5	9601-08	9601-38
94 x 125 x 65	340	40/6	9601-12	9601-42
119 x 125 x 65	700	40/8	9601-14	9601-44
142 x 150 x 75	1200	120/5	9601-16	9601-46
182 x 190 x 100	2600	120/10	9601-18	9601-48



9601-23

### **9601 INSTATHERM® OIL BATH, Large**

Large version bath that can accept round bottom flask up to 5L and other larger vessels. Bath measure 300mm (11.8 inches) I.D. by 250mm (9.8 inches) deep. The bath has a rolled lip for easy handling. The maximum temperature on this bath is 100°C. The full capacity is 15L without a vessel, and typically should have a minimum of six liters when using a vessel like a 5L round bottom flask. Baths must be run with a heating media or oil. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord. Complete item includes clip for sensor and/or thermometer.

Approx. (mm) I.D. x O.D. x Hgt.	Capacity, Liters	Volt/Amp Rating	Bath & Cord	Complete w/Clip
			Order Code	Order Code
290 x 300 x 240	15	120/14	9601-23	9601-55



9602

### **9602 INSTATHERM® OIL BATH, Low Form**

The same vessels as listed under 9601 Low Form series except with longer integral cord that is 12 feet in length and is PTFE clad. Complete item includes clip for sensor and/or thermometer.

Approx. (mm) I.D. x O.D. x Hgt.	Capacity, mL	Volt/Amp Rating	Bath & Cord	Complete w/Clip
			Order Code	Order Code
64 x 70 x 50	160	20/5	9602-07	9602-37
94 x 100 x 55	340	40/6	9602-11	9602-41
119 x 125 x 65	700	40/8	9602-13	9602-43
142 x 150 x 75	1200	120/5	9602-15	9602-45
182 x 190 x 100	2600	120/10	9602-17	9602-47

***ACE Instatherm® items are available in special sizes and for special applications. Give us a call!***

## 9603 INSTATHERM® OIL BATH, High Form

High form, heavy walled glass vessels coated with Instatherm® to accommodate larger and taller vessels. A thermocouple well is imbedded in the insulation in this series. Do not run baths dry or above max voltage or breakage can occur. Bottom is uncoated so it can be used with or without magnetic stirrers. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord. Complete item includes clip for sensor and/or thermometer.

Approx. (mm) I.D. x O.D. x Hgt.	Volt/Amp Rating	Takes Flask Size, mL	Bath & Cord	Complete w/Clip
			Order Code	Order Code
90 x 100 x 100	40/10	300 & smaller	9603-02	9603-20
140 x 150 x 155	120/8	1000 & smaller	9603-04	9603-22
200 x 210 x 200	120/10	3000 & smaller	9603-06	9603-24



9603

## 9605 INSTATHERM® BEAKER, Griffin Low Form

With lip and pouring spout. With silicone rubber treated glass cloth insulation for use up to 250°C. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Approx. (mm) I.D. x O.D. x Hgt.	Capacity, mL	Volt/Amp Rating	Order Code
64 x 68 x 90	250	20/7	9605-40
72 x 77 x 110	400	40/6	9605-42
85 x 90 x 124	600	40/8	9605-44



9605

## 14115 BATH OIL

An extremely stable, medium viscosity silicone oil. Available in two temperature ranges:

Low Temp — maximum 180°C; or

High Temp — maximum 230°C.

Type	Size	Order Code
Low Temp (180°C)	.9L (1 Qt.)	14115-05
High Temp (230°C)	.9L (1 Qt.)	14115-12
Type	Size	Order Code
Low Temp (180°C)	1.8L (1/2 Gal.)	14115-10
High Temp (230°C)	1.8L (1/2 Gal.)	14115-14

Low temp oil color is CLEAR. High temp oil color is

14115



## 9698 CONNECTING CONTROLLER CORDS

Controller cords with various connectors for connecting all Instatherm® vessels to temperature controllers. -16 and -20 cords have 10 amp, "fast-acting" fuse to protect both vessel and controller from over-voltage or surges.

Description	Order Code
Cinch Type	9698-05
Pin Type	9698-10
Banana Type (old style)	9698-16
Twist Lock Type (new style)	9698-20

9698-16



9698-05



9698-10

9698-20



## 9601 CLIPS, for Thermocouple or Thermometer

Description	For Bath Series	Order Code
Small clip with one hole	9601-08	9601-29
Medium clip with two different sized holes	All other baths	9601-30
Medium clip with two 1/4-inch holes	All other baths	9601-32
Large clip with two 1/4-inch holes	9603-06	9601-34
Extra large clip with two 1/4-inch holes	9601-23	9601-36

9601-30





### 9610 INSTATHERM® FUNNEL, Addition

Graduated addition funnel with Instatherm® coating for critical heating. The funnel has a bottom inner standard taper joint and an outer joint on top. The funnel can be hooked to an Ace temperature controller and heated for liquefying solids or keeping liquids at a set temperature for addition to system or a reactor. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Capacity, mL	Volt/Amp Rating	⌘ Joints	⌘ Stopcock	Order Code
125	40/5	24/40	2	9610-08
250	40/6	24/40	2	9610-10
500	40/10	24/40	4	9610-12
500	40/10	29/42-24/40	4	9610-14



### 9625 INSTATHERM® DESICCATOR, Vacuum Oven

250mm diameter with bottom Instatherm® heated (low voltage: 40 volts, 10 amps maximum). Top is not heated, but has insulation cover. May be used as a vacuum oven continuously at temperatures up to 180°C. The top has an observation stripe for visibility and is supplied with vacuum take-off valve. Insulation is resilient silicone rubber impregnated glass cloth, and electrical connections are covered. Temperatures can be regulated by means of Ace temperature controllers. Also available with uncoated top. Supplied complete with detachable cord, for 250°C operation, 102mm immersion 10/30 ground joint thermometer, and thermometer adapter.

	Order Code		Order Code
Desiccator	9625-04	Thermometer	8314-31
Adapter	9061-10	Complete	9625-10

9625-04 and 9625-10 supplied with controller cord.



### 9635 INSTATHERM® FLASK, High Temp Type, Single Neck

Distilling, round bottom with ⌘24/40 joint. With silicone rubber treated glass cloth insulation for use up to 250°C. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Cap., mL	Volt/Amp Rating	Order Code
500	40/6	9635-158
1000	40/10	9635-160



### 9633 INSTATHERM® FLASK, Erlenmeyer

Ace Erlenmeyer flask with Instatherm® provide a convenient, safe heating of contents in the popular Erlenmeyer flask format for bench or magnetic stirrer use. For operation up to 250°C. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Capacity, mL	Volt/Amp Rating	Order Code
125	20/8	9633-08
250	20/8	9633-10
500	40/7	9633-14

## 9642 INSTATHERM® FLASK, High Temp, Three Necks

Distilling, round bottom with three 24/40 joints. With silicone rubber treated glass cloth insulation for use up to 250°C. No clamp needed. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Capacity, mL	Volt/Amp Rating	Order Code
250	20/8	9642-127
500	40/7	9642-129
1000	40/10	9642-131



9642

## 6388 INSTATHERM® FILTER REACTOR, Unjacketed ★

Rugged, heavy-wall reactor, Instatherm® coated for safer, rapid heating. Flange at top has shallow O-ring groove, for connection to 6527, 6528, 6529 or 6533 heads, with 6517 quick release clamp. Bottom has a #50 or #80 Ace-Thred (internal glass thread) for installing 5838-80 or 5857-85 bottom adapter with filter support and drain valve. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Cap., mL	Flange I.D., mm (in.)	Bottom Thread Size	Body I.D., mm	Approx. Depth, mm	Replacement CAPFE O-ring	Volts	Amps	Watts	Order Code
150	60 (2.4)	#50	50	115	7855-878	40	6	240	6388-15
600	60 (2.4)	#50	50	185	7855-878	40	8	320	6388-20
1000	100 (4)	#80	96	180	7855-880	120	5	600	6388-25
2000	100 (4)	#80	126	115	7855-880	120	8	960	6388-30
3000	150 (6)	#80	150	185	7855-881	120	9	1080	6388-35
6000	150 (6)	#80	150	350	7855-881	120	10	1200	6388-40



6388

## 9655 INSTATHERM® REACTION FLASK

Rugged cylindrical reaction flask with Duran®, flat, ground 4-inch flange with O-ring groove for use with 6517-25 quick release clamp and integral heating element that eliminates the local superheating commonly associated with more conventional heating methods and eliminates cumbersome oil baths. The response is rapid and accurate. Supplied with silicone coating for insulation and protection. O-ring (supplied with flask) is CAPFE (PTFE encapsulated silicone). Flask is coated to within approximately 38mm of the flange for 250°C operation. Interchangeable with all Ace reactor heads. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord.

Cap., mL	Volt/Amp Rating	Watts	Order Code
1000	40/8	400	9655-17
2000	120/5	600	9655-22
Clamp, only			6517-25



9655

## 9656 INSTATHERM® REACTION FLASK

Same flask as listed under 6476, except with Instatherm. Has flat-ground, 4-inch conical flange. This integral heating element eliminates the local super-heating commonly associated with more conventional heating methods. Eliminates cumbersome and dangerous oil baths. The response is rapid and accurate. Supplied with 9698-20 cord for connection to variable voltage or temperature controller. Flask is coated to within 38mm of the flange for 200°C operation, 360°C maximum on special order. Interchangeable with all Ace 4-inch reaction heads. For controllers, see Ace or J-Kem temperature controllers with voltage limiting output, such as 12125, 12324. Use 6496 clamp for securing head to flask.

Cap., mL	Volt/Amp Rating	Watts	Order Code
1000	40/8	400	9656-08
2000	120/5	600	9656-12



9656

3704



### 3704 INSTATHERM® FILTRATION FUNNEL, 47mm

This 47mm filtration funnel uses Ace Glass proprietary Instatherm technology to evenly heat viscous materials, keeping them in a flowing, liquid state. Excellent for filtering oils or thick slurries using either 47mm membranes or filter paper disks. Perfect for sample prep for various ASTM petroleum and polymer testing procedures and for new biofuel testing protocols. Three-pronged plug for insertion into Ace temperature controllers. Integral six-foot controller cord. For the complete filtration apparatus, see our Laboratory Glassware & Equipment Catalog.

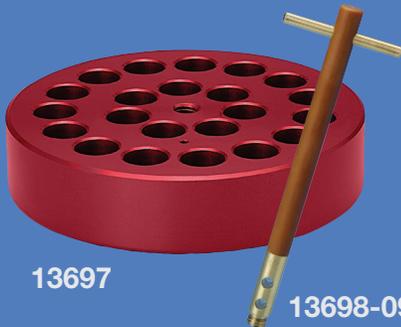
#### Description

500mL Instatherm coated filter funnel w/temp controller connecting cord

#### Order Code

3704-01

13697



13698-09

### 13697 INSTATHERM® BLOCKS

Individual Ace Dynablocs for use in Instatherm® baths. Block diameter (141mm) is for use in the 9601-16 – 1,200mL Instatherm® bath.

#### Description

For 22, 2 Dr./8mL or 17 mm O.D. vials  
 For 14, 4 Dr./16mL or 22mm O.D. vials  
 For 24, 16mm O.D. tubes  
 For 8, 40mL or 28mm O.D. vials

#### Block Height

30.8mm  
 38.8mm  
 50mm  
 50mm

#### Order Code

13697-04  
 13697-08  
 13697-16  
 13697-40

#### Accessory

T-Handle Extractor (fits all Ace Dynablocs)

13698-09

**For a complete listing of ACE temperature sensors, see our Laboratory Glassware & Equipment Catalog.**



## ACE GLASS INCORPORATED

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