



SIGMA-ALDRICH

INSTRUCTION MANUAL

SEMI-DRY ELECTROBLOTTING UNIT Z34,050-2

WARNING

THESE UNITS ARE CAPABLE OF DELIVERING POTENTIALLY LETHAL VOLTAGE WHEN CONNECTED TO A POWER SUPPLY AND ARE TO BE OPERATED ONLY BY QUALIFIED TECHNICALLY TRAINED PERSONNEL.

PLEASE READ THE ENTIRE OPERATOR'S MANUAL THOROUGHLY BEFORE OPERATING THIS UNIT.

THESE UNITS COMPLY WITH THE STATUTORY CE SAFETY DIRECTIVES:

**73/23/EEC: LOW VOLTAGE DIRECTIVE: IEC 1010-1:1990 plus AMENDMENT 1:1992
EN 61010-1:1993/BS EN 61010-1:1993**

THE SIGMA-ALDRICH SEMI-DRY ELECTROBLOTTING UNITS ARE DESIGNED TO GIVE LONG SERVICE AND REPRODUCIBLE RESULTS IN YOUR LABORATORY. A FEW MOMENTS SPENT READING THESE INSTRUCTIONS WILL ENSURE THAT YOUR EXPECTATIONS ARE REFLECTED IN THE SUCCESSFUL USE OF THE APPARATUS.

FIRST CHECK THAT THE APPARATUS HAS BEEN RECEIVED COMPLETE AND UNDAMAGED FOLLOWING SHIPMENT. ANY FAULTS OR LOSSES MUST BE NOTIFIED TO SIGMA-ALDRICH IMMEDIATELY, SIGMA-ALDRICH CANNOT ACCEPT RESPONSIBILITY FOR GOODS RETURNED WITHOUT PRIOR NOTIFICATION.

REFER TO THE PACKING LIST AND CHECK THAT ALL COMPONENTS AND ACCESSORIES ARE PRESENT.

**PLEASE RETAIN ALL PACKAGING
MATERIALS UNTIL THE WARRANTY
PERIOD HAS EXPIRED.**

SPECIFICATIONS:

Construction:

- Rugged acrylic construction.
- All acrylic joints chemically bonded.
- Doubly insulated cables, rated safe up to 1,000 volts.
- Gold plated electrical connectors, corrosion-free and rated safe up to 1,000 volts.
- Recessed power connectors, integral with the safety lid.
- Platinised Titanium positive electrode.
- Stainless Steel negative electrode.

Environmental Conditions:

- This apparatus is intended for indoor use only.
- This apparatus can be operated safely at an altitude of 2,000m.
- The normal operating temperature range is between 4°C and 65°C.
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

- The apparatus is rated POLLUTION DEGREE 2 in accordance with IEC 664. POLLUTION DEGREE 2, states that: "Normally only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected".

Operational:

- **Maximum operating current: 1 Amp**
- **Maximum operating voltage: 100 Volts**

USING THE SEMI-DRY ELECTROBLOTTING UNIT

A. Safety Precautions

- **READ** the instructions before using the apparatus.
- Always isolate the units from their power supply before removing the safety cover. Isolate the power supply from the mains **FIRST** then disconnect the leads.
- **DO NOT** exceed the maximum current.
- **DO NOT** operate the units in metal trays.
- Acrylamide is a volatile, cumulative neurotoxin and suspected carcinogen. Wear effective protective clothing and follow recommended handling and disposal procedures.
- Polymerised gels contain some unpolymerised monomer. Handle with gloves only.
- Following the replacement of an electrode have the unit inspected and approved by your safety officer prior to use.
- **DO NOT** move the unit when it is running.
- **CAUTION:** During electroblotting very low quantities of various gases are produced at the electrodes. The type of gas produced depends on the composition of the buffer employed. To disperse these gases make sure that the apparatus is run in a well ventilated area.

B. General Care and Maintenance

- To remove the safety lid, make sure that the leads are disconnected and lift the lid vertically with your fingers.
- Before use clean and dry the apparatus with **DISTILLED WATER ONLY**. **IMPORTANT:** Acrylic plastic is **NOT** resistant to aromatic or halogenated hydrocarbons, ketones, esters, alcohol's (over 25%) and acids (over 25%), they will cause "crazing" especially of the UV transparent plastic and should **NOT** be used for cleaning. **DO NOT** use abrasive creams or scourers. Dry components with clean tissues prior to use.
- Ensure that the connectors are clean and dry before usage or storage.

C. Instructions for use (See also figure 1 on next page)

Cut 6 pieces of Extra Thick blotting paper and a piece of blotting membrane to the exact size of the gel to be blotted.

Place the gel in blotting buffer and agitate gently.

Take 3 pieces of the cut filter paper and soak in the blotting buffer. Place these on the bottom (anode) electrode plate of the blotting unit. Make sure that all the pieces are lined up squarely. Using a roller and only gentle pressure remove any air bubbles from between the papers.

Soak the blotting membrane in the running blotting buffer and place on top of the filters.

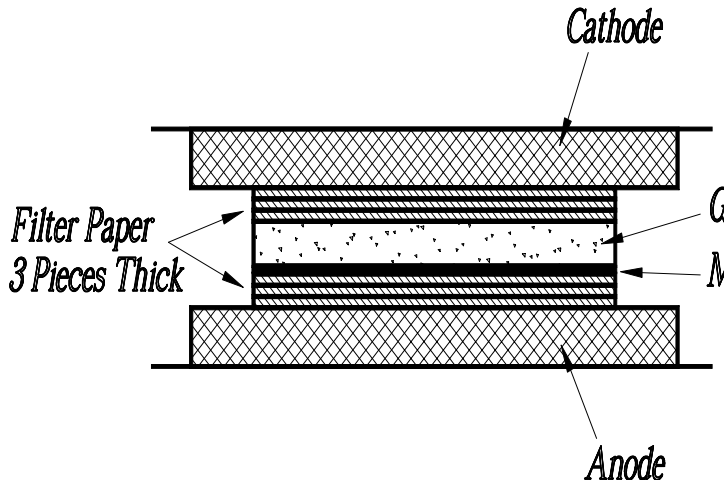
Remove the gel from the blotting buffer and place on top of the blotting membrane. Being careful not to introduce any air bubbles.

Finally, soak the last 3 pieces of filter paper in the blotting buffer and place on top of the gel. Using a roller gently remove any air bubbles from the stack.

Place the top (cathode) electrode plate on top of the stack.

See Figure 1.

Figure 1 Single Blot



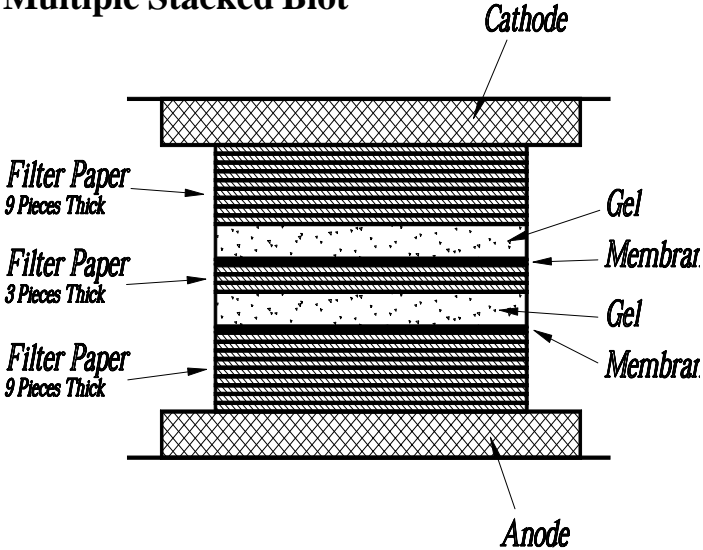
Connect the power leads. The black lead into the cathode at the side of the unit and the red lead to anode through the top of the unit.

The blotter should run at 0.8mA per centimeter squared of gel, e.g. an 8 x 10cm gel will run at 64mAmps for 1 to 2 hours. The actual run time will depend on the size of the molecules to be transferred. Large proteins and long nucleic acids will need at least 2 hours, smaller molecules less.

NOTE: If more than one gel is to be blotted under the same conditions, simply stack them as previously described, with 3 pieces of filter paper and a membrane between each gel and 9 pieces of filter paper at either electrode.

See Figure 2.

Figure 2 Multiple Stacked Blot



NOTE: To prevent small proteins from travelling through the blotting membrane and contaminating the one below, blotting cellophane can be used beneath the blotting membrane.

PACKING LIST:

Z34,050-2

<u>No. Items</u>	<u>Description</u>	<u>Part Number</u>
1	Main Unit with lid.	Z34,050-2
1	Set of leads with connectors	-
1	Instruction manual	-

QUALITY CHECK LIST

Model..... Serial Number.....

1. Electrode Conductivity Test Check.....
2. Labels Positioned Check.....
3. Labels Test/Serial No. Check.....
4. Unit Scratch/Blemish Free Check.....
5. Accessories - See Packing List Check.....
6. Instructions Check.....

ALL SIGMA-ALDRICH PRODUCTS ARE SUPPLIED HAVING PASSED RIGOROUS QUALITY CONTROL PROCEDURES. IF YOU HAVE A QUERY, CONTACT YOUR LOCAL SIGMA-ALDRICH OFFICE FOR TECHNICAL SUPPORT.

SIGNED.....

QUALITY CONTROL ASSESSOR

WARRANTY

SIGMA-ALDRICH guarantees that the unit you have received has been thoroughly tested and meets its published specification.

This unit (excluding all accessories) is warranted against defective material and workmanship for a period of twelve (12) months from the date of shipment ex factory.

SIGMA-ALDRICH will repair all defective equipment returned during the warranty period without charge, provided the equipment has been used under normal laboratory conditions and in accordance with the operating limitations and maintenance procedures outlined in this instruction manual and when not having been subject to accident, alteration, misuse or abuse.

No liability is accepted for loss or damage arising from the incorrect use of this unit. SIGMA-ALDRICH's liability is to the repair or replacement of the unit or refund of the purchase price, at SIGMA-ALDRICH's option. SIGMA-ALDRICH is not liable for any consequential damages.

SIGMA-ALDRICH reserves the right to alter the specification of its products without prior notice. This will enable us to implement developments as soon as they arise.

SIGMA-ALDRICH products are for research use only.

A return authorisation must be obtained from SIGMA-ALDRICH before returning any product for warranty repair on a freight prepaid basis.

WARNING

DO NOT attempt to remove the outer casing or make repairs to our electrical range of products, should any unit fail. Contact SIGMA-ALDRICH immediately if the need for repair or servicing should arise.

See back cover for contact details of your local SIGMA-ALDRICH office

Sigma-Aldrich Sales Offices in Europe

Austria

SIGMA-ALDRICH Handels GmbH
Hebbelplatz 7
1100 Wien
Tel: 01-605 81 10
Fax: 01-605 81 20
E-mail: sigma@sigma.co.at

Belgium

SIGMA-ALDRICH nv/sa
K.Cardijnplein 8
B-2880 Bornem
Tel: 03 899.13.01
Fax: 03 899.13.11
E-mail: sigmaldr@sial.be

Czech Republic

SIGMA-ALDRICH s.r.o.
Pobrezni 46
186 00 Praha 8
Tel: 00-420-2-2176 1300
Fax: 00-420-2-2176 3300
E-mail: CZECustSV@eurnotes.sial.com

Denmark

SIGMA-ALDRICH Denmark S/A
Vejlegaardsvej 65 B
DK-2665 Vallensbaek Strand
Tel: +45 43 56 59 00
Fax: +45 43 56 59 05
E-mail: denorder@eurnotes.sial.com

Eire

SIGMA-ALDRICH Ireland Ltd
Airton Road
Tallaght
Dublin 24
Tel: 01 404 1900
Fax: 01 404 1910
E-mail: EICustsv@eurnotes.sial.com

Finland

SIGMA-ALDRICH Finland
YA-Kemia Oy
Teerisuonkuja 4
00700 Helsinki
Tel: (09) 350-9250
Fax: (09) 350-9255
E-mail: fnorder@eurnotes.sial.com

France

SIGMA-ALDRICH Chimie S.a.r.l
L'Isle D'Abeau Chesnes
B.P. 701
38297 St.Quentin Fallavier
Cedex
Tel Numero Vert: 0800 21 14 08
Fax Numero Vert: 0800 03 10 52
E-mail: fradsv@eurnotes.sial.com

Germany

SIGMA-ALDRICH Chemie GmbH
Gruenwalder Weg 30
D-82041 Deisenhofen
Tel: +49(0)89-6513-0
Fax: +49(0)89-6513-1169
E-mail: DeOrders@eurnotes.sial.com

Greece

SIGMA-ALDRICH (o.m) Ltd
72 Argonafton Str
16346 Ilioupoli, Athens
Tel: 30-1-9948010
Fax: 30-1-9943831
E-mail: GRCustSV@SIALEUROPE

Hungary

SIGMA-ALDRICH Kft
1399 Budapest
Pf. 701/400
Magyarorszag
Tel: 06-1-235-9055
Fax: 06-1-235-9050
E-mail: info@sigma.sial.hu

Italy

SIGMA-ALDRICH S.r.l.
Via Gallarate 154
20151 Milano
Tel: 02-33417.310
Fax: 02-38010.737
E-mail: itorer@eurnotes.sial.com

Netherlands

SIGMA-ALDRICH Chemie BV
Stationsplein 4 E
Postbus 27
NL-3330 AA Zwijndrecht
Tel: 078-620 54 11
Fax: 078-620 54 21
E-mail: nlcustsv@eurnotes.sial.com

Norway

SIGMA-ALDRICH Norway AS
PO Box 4297 – Torshov
Sandakerveien 102
N-0401 OSLO
Tel: 47 22 091500
Fax: 47 22 091510
E-mail: nororder@eurnotes.sial.com

Poland

SIGMA-ALDRICH Sp.zo.o
Szczelagowska 30
61-626 Poznan
Tel: (48-61) 823-24-81
Fax: (48-61) 823-27-81
E-mail: plcustsv@eurnotes.sial.com

Portugal

SIGMA-ALDRICH Quimica S.A.
(Sucursal em Portugal)
Aptdo. 131
2710 Sintra
Free phone: 0800-202180
Free fax: 0800-202178
E-mail,
encomendas: poorders@eurnotes.sial.com

Spain

SIGMA-ALDRICH Quimica S.A.
Aptdo. 161
28100 Alcobendas (Madrid)
Tel: 91-6619977
Fax: 91-6619642
E-mail, pedidos: esorders@eurnotes.sial.com

Sweden

SIGMA-ALDRICH Sweden AB
Solkraftsvagen 14C
135 70 Stockholm
Tel: 020-35 05 10
Fax: 020-35 25 22
E-mail: swoorder@eurnotes.sial.com

Switzerland

SIGMA-ALDRICH Chemie
A division of Fluka Chemie AG
Postfach 260
CH-9471 Buchs
Tel: 081-755 27 21
Fax: 081-755 28 40
E-mail: Fluka@sial.com

United Kingdom

SIGMA-ALDRICH Company Ltd
The Old Brickyard, New Road
Gillingham, Dorset SP8 4XT
Tel: 01747 833000
Fax: 01202 715460
E-mail: ukcustsv@eurnotes.sial.com