



THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH
BIOCHEMICALS AND DIAGNOSTIC REAGENTS

ATTN: SAFETY DIRECTOR
UNIVERSITY OF WISCONSIN
WHITEWATER
ACCOUNTS PAYABLE
PO BOX 296
WHITEWATER WI 53190-0296

EMERGENCY PHONE 1-314-771-5765

DATE 06/04/96
CUST#: 2-097-94804
PO#: UNF-64248

M A T E R I A L S A F E T Y D A T A S H E E T

PAGE 1

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 665-5

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -

CATALOG #: T1377
NAME: TRIETHANOLAMINE FREE BASE

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

CAS #: 102-71-6
MF: C6H15NO3
EC NO: 203-049-8

SYNONYMS

DALTOGEN * NITRILO-2,2',2''-TRIETHANOL * 2,2',2''-NITRILOTRIETHANOL *
STEROLAMIDE * TEA * THIOFACO T-35 * TRIAETHANOLAMIN-NG *
TRIETHANOLAMIN * TRIETHANOLAMINE * TRIETHYLAMINE, 2,2',2''-TRIHOROXY-
* TRIETHYLLOLAMINE * TRI(HOROXYETHYL)AMINE * TRIHOROXYTRIETHYLAMINE
* TRIS(2-HOROXYETHYL)AMINE * TROLAMINE *

SECTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS

IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):

LIVER
KIDNEYS

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.

SECTION 4. - - - - - FIRST-AID MEASURES - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS
AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED
CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS
WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -

EXTINGUISHING MEDIA
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

SIGMA-ALDRICH VERTRIEBS GmbH Grünvalder Weg 30 82041 Deisenhofen Deutschland	SIGMA-ALDRICH QUIMICA, S.A. Apt. Correos 161 28100 Alcobendas (Madrid) España	SIGMA-ALDRICH s.r.o. Krizikova 27 186 00 Praha 8 Ceská Republika	SIGMA CHEMIE K. Cardijnplein, 8 B-2880 Bornem België/Belgique	SIGMA CHEMIE P.O. Box 260 CH-9470 Buchs Switzerland	SIGMA-ALDRICH QUIMICA, S.A. de C.V. Avenida Picacho Ajusco No. 130-303 Fraccionamiento Jardines en la Montaña 14210 Mexico, D.F.	SIGMA-ALDRICH CORPORATION New Delhi Location B-4/159, Safdarjung Enclave New Delhi - 110 029 India
SIGMA CHIMIE ISLE D'Abreu Chesnes B.P. 701 98297 St. Quentin Fallavier Cedex France	SIGMA-ALDRICH S.r.l. Via Gallarate 154 20151 Milano Italia	SIGMA-ALDRICH PTY., LIMITED Unit 2, 10 Anella Ave. Castle Hill NSW 2154 Australia	SIGMA-ALDRICH CHEMICAL REPRESENTACOES LTDA Rua Sabará, 566 - Conj. 53 01239-010 São Paulo, SP Brasil	SIGMA CHEMICAL CO. LTD. Fancy Road, Peole Dorset BH17 7NH England	SIGMA-ALDRICH Kft Teréz krt. 39 1067 Budapest Hungary	SIGMA-ALDRICH 206 Samhan Campus Building 17-3 Yoido-dong Yungdeungpo-ku Seoul South Korea



CUST#: 2-097-94804
PO#: UNF-64248

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 2

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 665-5

CATALOG #: T1377
NAME: TRIETHANOLAMINE FREE BASE

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES - - - - -

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. - - - - - HANDLING AND STORAGE - - - - -

REFER TO SECTION 8.

ADDITIONAL INFORMATION
MAY SEGREGATE OR FREEZE BELOW 60 F. THAW AND MIX BEFORE USING.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
FACESHIELD (8-INCH MINIMUM).
DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
KEEP TIGHTLY CLOSED.
HYGROSCOPIC
AIR AND LIGHT SENSITIVE
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -

APPEARANCE AND ODOR
VISCIOUS COLORLESS LIQUID OR WHITE

PHYSICAL PROPERTIES

BOILING POINT: 190 C TO 193 C/5MM.
MELTING POINT: 17.9 C TO 21 C
FLASHPOINT 365 F
184C

EXPLOSION LIMITS IN AIR:

UPPER 8.5%
LOWER 1.3%

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

SIGMA-ALDRICH VERTRIEBS GmbH Grünwalder Weg 30 82041 Delsenhofen Deutschland	SIGMA-ALDRICH QUIMICA, S.A. Apt. Correos 161 28100 Alcobendas (Madrid) España	SIGMA-ALDRICH s.r.o. Krizikova 27 186 00 Praha 8 Ceská Republika	SIGMA CHEMIE K. Cardijnplein, 8 B-2880 Bornem Belgie/Belgique	SIGMA CHEMIE P.O. Box 260 CH-8470 Buchs Switzerland	SIGMA-ALDRICH QUIMICA, S.A. de C.V. Avenida Picacho Ajusco No. 130-303 Fraccionamiento Jardines en la Montaña 14210 Mexico, D.F.	SIGMA-ALDRICH CORPORATION 10385 New Delhi Location B-4/159, Saldarjung Enclave New Delhi - 110 029 India
SIGMA CHIMIE L'ISLE D'Abauv Chesnes B.P. 701 98297 St. Quentin Fallavier Cedex France	SIGMA-ALDRICH S.r.l. Via Gallarate 154 20151 Milano Italia	SIGMA-ALDRICH PTY., LIMITED Unit 2, 10 Anella Ave. Castle Hill NSW 2154 Australia	SIGMA-ALDRICH CHEMICAL REPRESENTACOES LTDA. Rua Sabará, 566 - Conj. 53 01239-010 São Paulo, SP Brasil	SIGMA CHEMICAL CO. LTD. Fancy Road, Poole Dorset BH17 7NH England	SIGMA-ALDRICH Kft Terez krt. 39 1067 Budapest Hungary	SIGMA-ALDRICH 206 Samhan Campus Building 17-3 Yoico-dong Yungdeungpo-ku Seoul South Korea

CUST#: 2-097-94804
PO#: UNF-64248

M A T E R I A L S A F E T Y D A T A S H E E T PAGE 3

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 665-5

CATALOG #: T1377
NAME: TRIETHANOLAMINE FREE BASE

AUTOIGNITION TEMPERATURE: 600 F 315C
VAPOR PRESSURE: 0.01MM 20 C 10MM 205 C
SPECIFIC GRAVITY: 1.124
VAPOR DENSITY: 5.14

SECTION 10. - - - - -STABILITY AND REACTIVITY - - - - -

INCOMPATIBILITIES
OXIDIZING AGENTS
LIGHT SENSITIVE
AIR SENSITIVE
AVOID CONTACT WITH ACID.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
THERMAL DECOMPOSITION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE,
AND NITROGEN OXIDES.

SECTION 11. - - - - -TOXICOLOGICAL INFORMATION - - - - -

ACUTE EFFECTS
MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
CAUSES SKIN IRRITATION.
EXPOSURE CAN CAUSE:
DERMATITIS

CHRONIC EFFECTS
DAMAGE TO THE LIVER
DAMAGE TO THE KIDNEYS

RTECS #: KL9275000
ETHANOL, 2,2',2''-NITRILOTRI-

IRRITATION DATA

SKN-HMN 15 MG/3D-I MLD	85DKA8 - 127,77
SKN-RBT 560 MG/24H MLD	TXAPA9 19,276,71
EYE-RBT 20 MG SEV	AJOPAA 29,136,46
EYE-RBT 10 MG MLD	TXAPA9 55,501,80

TOXICITY DATA

ORL-RAT LD50:8 GM/KG	NTIS** PB158-507
ORL-MUS LD50:5846 MG/KG	SRTCAC 36(1-4),10,89
IPR-MUS LD50:1450 MG/KG	RCRVAB 38,975,69
ORL-RBT LD50:2200 MG/KG	85GMAT -,114,82
SKN-RBT LD50:>20 ML/KG	UCDS** 3/18/65
ORL-GPG LD50:2200 MG/KG	85GMAT -,114,82

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

SIGMA-ALDRICH VERTRIEBS GmbH Grünwalder Weg 30 62041 Delsenhofen Deutschland	SIGMA-ALDRICH QUIMICA, S.A. Apt. Correes 161 28100 Alcobendas (Madrid) España	SIGMA-ALDRICH s.r.o. Kizikova 27 186 00 Praha 8 Ceska Republika	SIGMA CHEMIE K. Cardijnplein, 8 B-2880 Bornem Belgë/Belgique	SIGMA CHEMIE P.O. Box 260 CH-9470 Buchs Switzerland	SIGMA-ALDRICH QUIMICA, S.A. de C.V. Avenida Picacho Ajusco No. 130-303 Fraccionamiento Jardines en la Montaña 14210 Mexico, D.F.	SIGMA-ALDRICH CORPORATION New Delhi Location B-4/156, Saldarjung Enclave New Delhi - 110 029 India
SIGMA CHIMIE L'ISLE D'Abeau Chesnes B.P. 701 38297 St. Quentin Fallavier Cedex France	SIGMA-ALDRICH S.r.l. Via Gallarate 154 20151 Milano Italia	SIGMA-ALDRICH PTY., LIMITED Unit 2, 10 Anella Ave. Castle Hill NSW 2154 Australia	SIGMA-ALDRICH CHEMICAL REPRESENTAÇÕES LTDA. Rua Sabará, 566 - Conj. 53 01239-010 São Paulo, SP Brasil	SIGMA CHEMICAL CO. LTD. Fancy Road, Poole Dorset BH17 7NH England	SIGMA-ALDRICH KR Terez krt. 39 1067 Budapest Hungary	SIGMA-ALDRICH 206 Santhan Campus Building 17-3 Yoido-dong Yungdeungpo-gu Seoul South Korea

THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH
BIOCHEMICALS AND DIAGNOSTIC REAGENTS

CUST#: 2-097-94804
PO#: UNF-64248

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 4

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 665-5

CATALOG #: T1377
NAME: TRIETHANOLAMINE FREE BASE

DATA NOT YET AVAILABLE.

SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

IRRITANT
R 36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
S 26

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.

S 36
WEAR SUITABLE PROTECTIVE CLOTHING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
EPA FIERA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,89

OEL-SWEDEN: TWA 5 MG/M3; STEL 10 MG/M3 JAN93
NOHS 1974: HZD M0260; NIS 297; TNF 61500; NOS 201; TNE 821293
NOES 1983: HZD M0260; NIS 311; TNF 70726; NOS 195; TNE 1726272; TFE
573604

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1995
NIOSH ANALYTICAL METHOD, 1994: AMINOETHANOL COMPOUNDS II, 3509
NTP CARCINOGENESIS STUDIES; TEST COMPLETED (POST PEER REVIEW), JULY
1995

SECTION 16. - - - - - OTHER INFORMATION - - - - -

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE
HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH
THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR
ADDITIONAL TERMS AND CONDITIONS OF SALE.

COPYRIGHT 1996 SIGMA CHEMICAL CO.
LICENSE GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

MATERIAL WAS SHIPPED TO THIS ADDRESS:

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

SIGMA-ALDRICH VERTRIEBS GmbH Grünwalder Weg 30 82041 Deisenhofen Deutschland	SIGMA-ALDRICH QUIMICA, S.A. Apt. Correos 161 28100 Alcobendas (Madrid) Espana	SIGMA-ALDRICH s.r.o. Krizkova 27 186 00 Praha 8 Ceska Republika	SIGMA CHEMIE K. Cardijnplein, 8 B-2680 Bornem Belgie/Belgique	SIGMA CHEMIE P.O. Box 260 CH-8470 Buchs Switzerland	SIGMA-ALDRICH QUIMICA, S.A. de C.V. Avenida Picacho Ajusco No. 130-303 Fraccionamiento Jardines en la Montaña 14210 Mexico, D.F.	SIGMA-ALDRICH CORPORATION 10387 New Delhi Location B-4/158, Safdarjung Enclave New Delhi - 110 029 India
SIGMA CHIMIE L'ISLE D'Abau Chesnes B.P. 701 33297 St. Quentin Fallavier Cedex France	SIGMA-ALDRICH S.r.l. Via Gallarate 154 20151 Milano Italia	SIGMA-ALDRICH PTY., LIMITED Unit 2, 10 Anella Ave. Castle Hill NSW 2154 Australia	SIGMA-ALDRICH CHEMICAL REPRESENTACOES LTDA. Rua Sabara, 568 - Conj. 53 01239-010 São Paulo, SP Brasil	SIGMA CHEMICAL CO. LTD. Fancy Road, Poole Dorset BH17 7NH England	SIGMA-ALDRICH Kft Terep krt. 39 1067 Budapest Hungary	SIGMA-ALDRICH 206 Samhan Campus Building 17-3 Yoido-dong Yungdeungpo-ku Seoul South Korea

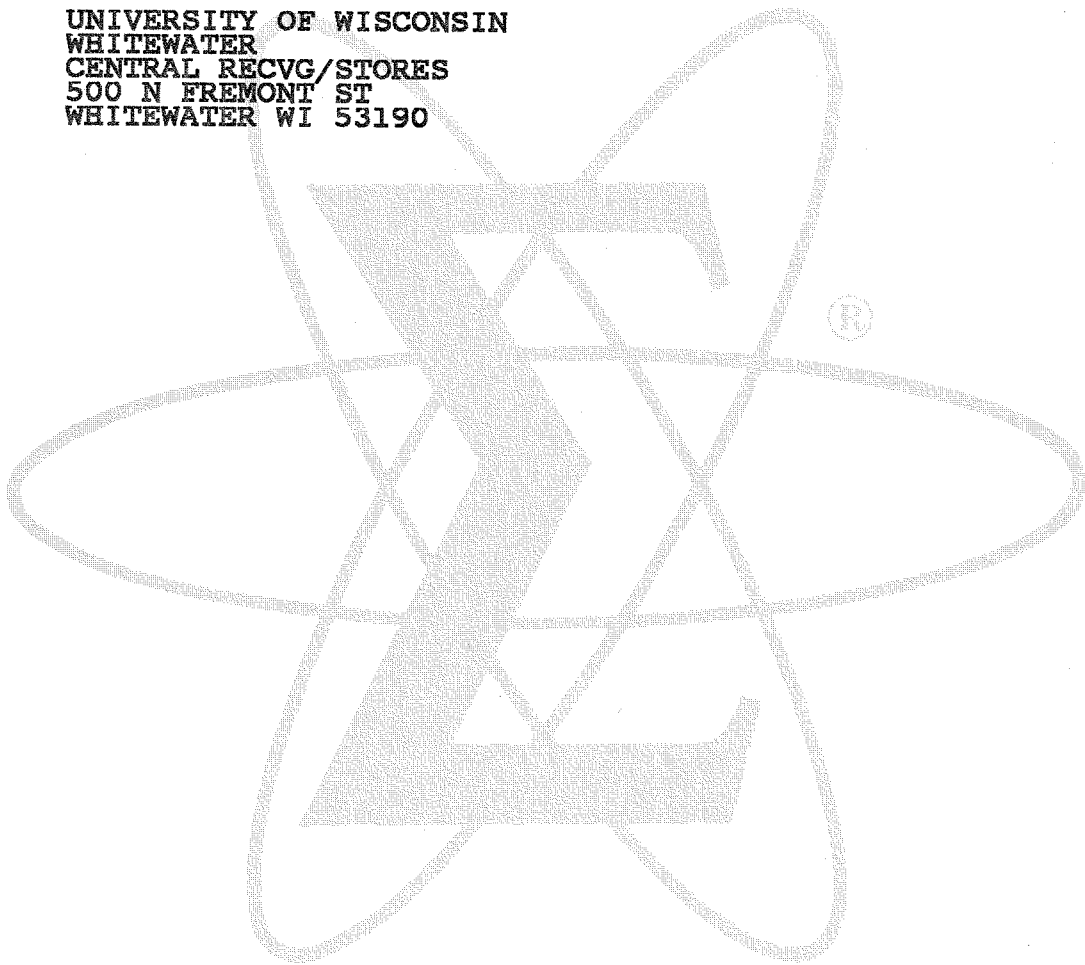
CUST#: 2-097-94804
PO#: UNF-64248

M A T E R I A L S A F E T Y D A T A S H E E T **PAGE 5**

THIS MSDS IS FOR A COMPONENT OF CATALOG #: **665-5**

CATALOG #: T1377
NAME: TRIETHANOLAMINE FREE BASE

UNIVERSITY OF WISCONSIN
 WHITEWATER
 CENTRAL RECVG/STORES
 500 N FREMONT ST
 WHITEWATER WI 53190



BRANCH OFFICES AT:

- | | | | | | | |
|---|--|---|--|---|--|--|
| SIGMA-ALDRICH
VERTRIEBS GmbH
Grünwalder Weg 30
82041 Dersenhofen
Deutschland | SIGMA-ALDRICH QUIMICA, S.A.
Apt. Correos 161
29100 Alcobendas
(Madrid)
España | SIGMA-ALDRICH S.r.l.
Krizkova 27
186 00 Praha 8
Ceská Republika | SIGMA CHEMIE
K. Cardijnplein, 8
B-2890 Bornem
Belgie/Belgique | SIGMA CHEMIE
P.O. Box 260
CH-9470 Buchs
Switzerland | SIGMA-ALDRICH QUIMICA, S.A. de C.V.
Avenida Picacho Ajusco No. 130-303
Fraccionamiento Jardines en la Montaña
14210 Mexico, D.F. | SIGMA-ALDRICH CORPORATION 10388
New Delhi Location
B-4/15B, Safdarjung Enclave
New Delhi - 110 029
India |
| SIGMA CHIMIE
L'ISLE D'Abeau Chesnes
B.P. 701
38297 St. Quentin Fallavier
Cedex
France | SIGMA-ALDRICH S.r.l.
Via Gallarate 154
20151 Milano
Italia | SIGMA-ALDRICH PTY., LIMITED
Unit 2, 10 Anella Ave.
Castle Hill NSW 2154
Australia | SIGMA-ALDRICH CHEMICAL
REPRESENTAÇÕES LTDA.
Rua Sabará, 586 - Conj. 53
01239-010 São Paulo, SP
Brasil | SIGMA CHEMICAL CO. LTD.
Fancy Road, Poole
Dorset BH17 7NH
England | SIGMA-ALDRICH KR
Teréz krt. 39
1067 Budapest
Hungary | SIGMA-ALDRICH
206 Samhan Campus Building
17-3 Yoido-dong Yungdeungpo-ku
Seoul
South Korea |