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ET0164 Ethylene glycol, EssentQ®, packed in HDPE bottles

assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	.passes test
density (20°/20°)	1,113 - 1,115
free acid (as CH ₃ COOH)	max. 0,001 %
chlorides (Cl)	max. 0,002 %
sulfates (SO ₄)	max. 0,01 %
copper (Cu)	max. 0,2 ppm

iron (Fe)	.max. 0,5 ppm
lead (Pb)	.max. 0,2 ppm
nickel (Ni)	.max. 0,2 ppm
diethyleneglycol (G.C.)	.max. 0,1 %
water (K.F.)	.max. 0,2 %

ART. NO.	VOLUME	CONTAINER
ET01641000	1 l	0
ET01642500	2,5 l	0
ET0164005P	5 l	P
ET0164025P	25 l	P

ET0166 Ethylene glycol, ExpertQ®, for analysis, Reag. Ph Eur

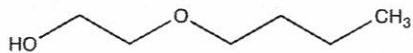
assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	.passes test
density (20°/20°)	1,113 - 1,115
refractive index n20/D	1,431 - 1,433
colour (Hazen)	max. 10
acidity	.passes test
chlorides (Cl)	max. 0,00002 %
iron (Fe)	max. 0,5 ppm

formaldehyde	.max. 0,005 %
substances reducing KMnO ₄	.passes test
substances darkened by H ₂ SO ₄	.passes test
residue on ignition	.max. 0,005 %
water (K.F.)	max. 0,1 %

ART. NO.	VOLUME	CONTAINER
ET01661000	1 l	0
ET01662500	2,5 l	0
ET0166005P	5 l	P
ET0166025P	25 l	P
ET0166200P	200 l	P

ETHYLENE GLYCOL MONOBUTYL ETHER

ET0175 Ethylene glycol monobutyl ether, EssentQ®

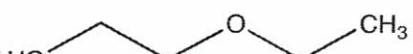


- Synonyms: 2-Butoxyethanol, Butyl glycol
- C₅H₁₀O₂
- M = 118,18 g/mol
- CAS [111-76-2]
- EINECS-No.: 203-905-0
- Density: 0,9 g/cm³
- Solub. in water: (20 °C): miscible
- Melting point: -70 °C
- Boiling point: 170 - 172 °C
- Flash pt. 67 °C
- Ignition temp.: 230 °C
- Vapour pressure: (20 °C) 0,8 hPa
- Refraction index: (n 20 °C/D) 1,4193
- Dielectric const.: (20 °C) 9,4
- LD 50 (oral, rat): 1480 mg/kg
- EC-Index-No.: 603-014-00-0
- GHS-signal word: Warning
- GHS-H sentences: H302 - H312 - H332 - H315 - H319
- GHS-P sentences: P261 - P280 - P305 + P351 + P338 - P321 - P322 - P501a
- Tariff number: 2909 43 00 00
- Applications: synthesis of organic products, solvents, manufacture of dyes, plasticizer, insecticide.

assay (G.C.)	.min. 99 %
identity (IR-spectrum)	.passes test
density (20°/4°)	0,900 - 0,901
peroxides (as H ₂ O ₂)	max. 0,005 %
water (K.F.)	max. 0,2 %
residue on ignition	max. 0,01 %

ART. NO.	VOLUME	CONTAINER
ET01751000	1 l	0

ETHYLENE GLYCOL MONOETHYL ETHER



- Synonyms: 2-Ethoxyethanol, Ethyl glycol, Ethyl cellosolve
- C₄H₁₀O₂
- M = 90,12 g/mol
- CAS [110-80-5]
- EINECS-No.: 203-804-1
- Density: 0,93 g/cm³
- Solub. in water: (20 °C): miscible
- Melting point: -100 °C
- Boiling point: 135 °C
- Flash pt. 40 °C
- Ignition temp.: 235 °C
- Vapour pressure: (20 °C) ~ 5 hPa
- Refraction index: (n 20 °C/D) 1,4075

- Dielectric const.: (20 °C) 11,9
- LD 50 (oral, rat): 2125 mg/kg
- EC-Index-No.: 603-012-00-X
- ADR: 3 F1 III UN 1171
- IMDG: 3 III UN 1171
- IATA/ICAO: 3 III UN 1171
- GHS-signal word: Danger
- GHS-H sentences: H331 - H360FD - H226 - H302
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P321 - P405 - P501a
- Tariff number: 2909 44 00 90
- Applications: synthesis of organic products, solvents, manufacturing of synthetic resins, manufacture of dyes.

ET0180 Ethylene glycol monoethyl ether, EssentQ®

assay (G.C.)	min. 99 %
identity (IR-spectrum)	.passes test
density (20°/4°)	0,929 - 0,931
peroxides (as H ₂ O ₂)	max. 0,005 %

residue on evaporation	.max. 0,005 %
water (K.F.)	max. 0,2 %

ART. NO.	VOLUME	CONTAINER
ET01801000	1 l	0
ET0180005P	5 l	P

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name Mowiol® 4-88 M_w ~31,000

Product Number 81381

Product Brand ALDRICH

CAS Number 9002-89-5

Molecular Weight

TEST

SPECIFICATION

APPEARANCE (COLOR) White to Faint Yellow to Faint Beige

APPEARANCE (FORM) Crystals

RESIDUE ON IGNITION ≤ 0.5 %

INFRARED SPECTRUM CONFORMS TO STRUCTURE

VISCOSITY 3 - 5 MPAS (20 C, 4 % IN H₂O)

MISCELLANEOUS TESTS DEGREE OF HYDROLYSIS 86.7-88.7 %
MOL

PROPERTIES

form

crystals

Quality Level

200

mol wt

$M_w \sim 31,000$

extent of labeling

86.7-88.7 mol% hydrolysis

~630 polymerization

ign. residue

$\leq 0.5\%$

viscosity

3.5-4.5 mPa.s, 4 % in H₂O(20 °C)

InChI

1S/C2H4O/c1-2-3/h2-3H,1H2

InChI key

IMROMDMJAWUWLK-UHFFFAOYSA-N

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name Triethanolamine ≥98%

Product Number T1377

Product Brand SIAL

CAS Number 102-71-6

Molecular Weight 149.19

TEST

SPECIFICATION

APPEARANCE CLEAR COLORLESS TO VERY FAINT
YELLOW LIQUID

**PURITY BY PERCHLORIC ACID
TITRATION** NLT 99.0%

**PURITY BY GAS
CHROMATOGRAPHY** NLT 98% TRIETHANOLAMINE NMT 1.0%
DIETHANOLAMINE

RECOMMENDED RETEST 2 YEARS

DOCUMENT # T1377/3/4/98/3

PROPERTIES

vapor density

5.14 (vs air)

vapor pressure

0.01 mmHg (20 °C)

Assay

≥98%

autoignition temp.

600 °F

expl. lim.

8.5 %

refractive index

$n_{20/D}$ 1.485 (lit.)

useful pH range

7.3-8.3

pKa (25 °C)

7.8

bp

190-193 °C/5 mmHg (lit.)

mp

17.9-21 °C (lit.)

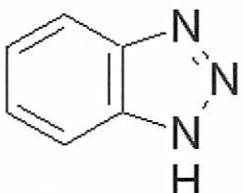
3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:
Benzotriazole - ReagentPlus®, 99%

Product Number: B11400
CAS Number: 95-14-7
MDL: MFCD00005699
Formula: C₆H₅N₃
Formula Weight: 119.12 g/mol



TEST	Specification
Appearance (Color)	White
Appearance (Form)	Powder or Crystals or Fibers
Infrared spectrum	Conforms to Structure
Titration by AgNO ₃	98.5 - 101.5 %
Purity (GC)	> 98.5 %

Specification: PRD.2.ZQ5.10000003700

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Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name 4-Nitrobenzoic acid 98%

Product Number 461091

Product Brand ALDRICH

CAS Number 62-23-7

Molecular Weight 167.12

TEST

SPECIFICATION

APPEARANCE (COLOR) Yellow

APPEARANCE (FORM) Powder or Crystals

TITRATION (T) NAOH 0.1M 97.5 - 102.5 %

PURITY (HPLC AREA %) ≥ 97.5 %

PROTON NMR SPECTRUM CONFORMS TO STRUCTURE

PROPERTIES

Quality Level

200

Assay

98%

form

solid

mp

237-240 °C (lit.)

SMILES string

OC(=O)c1ccc(cc1)[N+](=[O-])=O

InChI

1S/C7H5NO4/c9-7(10)5-1-3-6(4-2-5)8(11)12/h1-4H,(H,9,10)

InChI key

OTLNPYWUJOZPPA-UHFFFAOYSA-N

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name	Azelaic acid 98%
Product Number	246379
Product Brand	ALDRICH
CAS Number	123-99-9
Molecular Weight	188.22

TEST	SPECIFICATION
------	---------------

APPEARANCE (COLOR)	White
APPEARANCE (FORM)	Powder
TITRATION (T) NAOH 0.1M	97.5 - 102.5 %
PURITY (GC AREA %)	≥ 97.5 %
SOLUBILITY (COLOR)	Colorless to Very Faint Yellow
SOLUBILITY (TURBIDITY)	CLEAR
SOLUBILITY (METHOD)	5% IN ETHANOL
INFRARED SPECTRUM	CONFORMS TO STRUCTURE

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Product Specification

Product Name:
Octanoic acid - ≥99%

Product Number: C2875
CAS Number: 124-07-2
MDL: MFCD00004429
Formula: C₈H₁₆O₂
Formula Weight: 144.21 g/mol

**TEST****Specification**

Appearance (Color)	Colorless to Faint Yellow
Appearance (Turbidity)	Clear
Appearance (Form)	Liquid
Proton NMR Spectrum	Conforms to Structure
GC (area %)	> 99.0 %
Recommended Retest Period	-----
4 Years	

Specification: PRD.1.ZQ5.10000019065

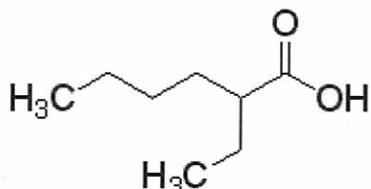
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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Product Specification

Product Name:
2-Ethylhexanoic acid - ≥99%

Product Number: 538701
CAS Number: 149-57-5
MDL: MFCD00002675
Formula: C8H16O2
Formula Weight: 144.21 g/mol

**TEST****Specification**

Appearance (Color)	Colorless
Appearance (Form)	Liquid
Infrared spectrum	Conforms to Structure
Refractive index at 20 °C	1.424 - 1.426
Water (by Karl Fischer)	≤ 0.10 %
Specific Gravity at 20 Degrees Celsius	0.907 - 0.909
Assay	> 99.0 %
Color Test	≤ 10 APHA

Specification Date : 02/03/2011

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PROPERTIES

vapor density

4.98 (vs air)

Quality Level

200

vapor pressure

<0.01 mmHg (20 °C)

10 mmHg (115 °C)

Assay

≥99%

autoignition temp.

699 °F

expl. lim.

1.04 %, 135 °F

8.64 %, 188 °F

refractive index

$n_{20/D}$ 1.425 (lit.)

bp

228 °C (lit.)

density

0.903 g/mL at 25 °C (lit.)

SMILES string

CCCCC(CC)C(O)=O



Specification

1.09959.0001 Sodium hydroxide solution for 1000 ml, $c(\text{NaOH}) = 0.1 \text{ mol/l}$ (0.1 N) Titrisol®

Specification

Form	liquid
Amount-of-substance concentration	0.1000 mol/l
Traceability	NIST SRM

This product is a Titrisol® concentrate. It contains exactly the amount of substance to prepare one liter of solution.
It can be used for the preparation of further concentrations.

The determined titer at 20 °C is 1.000 within a range of ± 0.004 .

The amount-of-substance concentration of this volumetric solution is traceable to a primary standard reference material (SRM) from the National Institute of Standards and Technology, Gaithersburg, USA (NIST SRM 84 potassium hydrogen phthalate) by means of volumetric standard potassium hydrogen phthalate (article number 1.02400), certified reference material according to ISO 17034, analyzed by our accredited calibration laboratory of Merck KGaA, Darmstadt, Germany according to DIN EN ISO/IEC 17025.

Note: The titer is a correction factor to correct for variations of the volumetric solution, the titration equipment, the temperature and other laboratory conditions. For correct titration results it is recommended to determine a titer with the laboratory specific equipment and under laboratory specific conditions directly after preparing a solution and at regular time intervals.

Ayfer Yildirim
Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.

11

3050 Spruce Street, Saint Louis, MO 63103, USA
 Website: www.sigmaaldrich.com
 Email USA: techserv@sial.com
 Outside USA: eurtechserv@sial.com

Product Specification

Product Name:
 Ethyl alcohol, Pure - 200 proof, ACS reagent, ≥99.5%

Product Number:	459844	CH ₃ CH ₂ OH
CAS Number:	64-17-5	
MDL:	MFCD00003568	
Formula:	C ₂ H ₆ O	
Formula Weight:	46.07 g/mol	

TEST

Specification

Appearance (Color)	Colorless
Appearance (Form)	Liquid
Infrared Spectrum	Conforms to Structure
Color Test	≤ 10 APHA
Corrected for Water Content	> 99.50 %
GC Purity, % Ethanol by Volume	
Methanol Content	≤ 0.1 %
Impurity	≤ 2 ppm
Benzene, by Gas Chromatography	
Residue on Evaporation	≤ 0.001 %
Water (by Karl Fischer)	≤ 0.2 %
Solubility	Pass
Substances Darkened (by H ₂ SO ₄)	Pass
Substances reducing MnO ₄	Pass
Acetone and Isopropyl Alcohol	Pass
Titratable Acid (meq/g)	≤ 0.0005
Titratable Base (meq/g)	≤ 0.0002
Meets ACS Requirements	Current ACS Specification
Recommended Retest Period	-----
3 Years	

Specification: PRD.7.ZQ5.10000004583

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



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AC0319 Acetone, 99,8%, anhydrous (max. 0,005% H₂O)

assay (G.C.)	min. 99,8 %	.min. 99,8 %
identity (IR-spectrum)	.passes test	.passes test
density (20°/4°)	0,787 - 0,791	0,787 - 0,791
appearance of solution	.passes test	.passes test
colour (Hazen)	max. 10	max. 10
solubility in water	.passes test	.passes test
insoluble in water	.passes test	.passes test
acidity	max. 0,0002 meq/g	max. 0,0002 meq/g
alkalinity	max. 0,0002 meq/g	max. 0,0002 meq/g
chlorides (Cl)	max. 0,00001 %	max. 0,00001 %
nitrates (NO ₃)	max. 0,00001 %	max. 0,00001 %
phosphates (as PO ₄)	max. 0,00001 %	max. 0,00001 %
sulfates (SO ₄)	max. 0,00001 %	max. 0,00001 %
aluminium (Al)	.max. 0,5 ppm	.max. 0,5 ppm
antimony (Sb)	.max. 0,02 ppm	.max. 0,02 ppm
arsenic (As)	.max. 0,02 ppm	.max. 0,02 ppm
barium (Ba)	.max. 0,1 ppm	.max. 0,1 ppm
beryllium (Be)	.max. 0,02 ppm	.max. 0,02 ppm
bismuth (Bi)	.max. 0,02 ppm	.max. 0,02 ppm
boron (B)	.max. 0,02 ppm	.max. 0,02 ppm
cadmium (Cd)	.max. 0,05 ppm	.max. 0,05 ppm
calcium (Ca)	.max. 0,5 ppm	.max. 0,5 ppm
chromium (Cr)	.max. 0,02 ppm	.max. 0,02 ppm
cobalt (Co)	.max. 0,02 ppm	.max. 0,02 ppm
copper (Cu)	.max. 0,02 ppm	.max. 0,02 ppm
gallium (Ga)	.max. 0,02 ppm	.max. 0,02 ppm
germanium (Ge)	.max. 0,02 ppm	.max. 0,02 ppm
gold (Au)	.max. 0,02 ppm	.max. 0,02 ppm
indium (In)	.max. 0,02 ppm	.max. 0,02 ppm
iron (Fe)	.max. 0,1 ppm	.max. 0,1 ppm
lead (Pb)	.max. 0,1 ppm	.max. 0,1 ppm
lithium (Li)	.max. 0,05 ppm	.max. 0,05 ppm
magnesium (Mg)	.max. 0,1 ppm	.max. 0,1 ppm
manganese (Mn)	.max. 0,02 ppm	.max. 0,02 ppm
molybdenum (Mo)	.max. 0,02 ppm	.max. 0,02 ppm
nickel (Ni)	.max. 0,02 ppm	.max. 0,02 ppm
silver (Ag)	.max. 0,02 ppm	.max. 0,02 ppm
thallium (Tl)	.max. 0,02 ppm	.max. 0,02 ppm
tin (Sn)	.max. 0,1 ppm	.max. 0,1 ppm
titanium (Ti)	.max. 0,02 ppm	.max. 0,02 ppm
vanadium (V)	.max. 0,02 ppm	.max. 0,02 ppm
zinc (Zn)	.max. 0,1 ppm	.max. 0,1 ppm
zirconium (Zr)	.max. 0,02 ppm	.max. 0,02 ppm
aldehydes (as HCHO)	.max. 0,002 %	.max. 0,002 %
cyclohexane (G.C.)	.max. 0,1 %	.max. 0,1 %
alcohol/diacetone (G.C.)	.max. 0,02 %	.max. 0,02 %
ethanol (G.C.)	.max. 0,01 %	.max. 0,01 %
methanol (G.C.)	.max. 0,05 %	.max. 0,05 %
2-propanol (G.C.)	.max. 0,05 %	.max. 0,05 %
heavy metals (as Pb)	.max. 2 ppm	.max. 2 ppm
reducing substances	.passes test	.passes test
residue on evaporation	.max. 0,0005 %	.max. 0,0005 %
water (K.F.)	.max. 0,005 %	.max. 0,005 %

ART. NO.	VOLUME	CONTAINER
AC03190500	500 ml	0
AC03191000	1 l	0

AC0293 Acetone, GC-MS

assay (G.C.)	min. 99,8 %
colour (Hazen)	max. 10
identity (IR-spectrum)	.passes test
residue on evaporation	max. 3 ppm
water (K.F.)	.max. 0,2 %

GC/MSD (retention range n-undecane to n-tetraoctane, scaning area 30 - 600 amu, individual signals (n-tetradecane standard) .max. 3,0 ng/ml (ppb) Suitable for residue analysis

ART. NO.	VOLUME	CONTAINER
AC02931000	1 l	0
AC02932500	2,5 l	0

AC0320 Acetone, VLSI grade

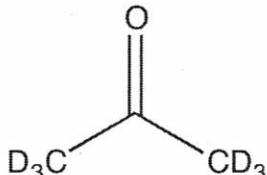
assay (G.C.)	min. 99,5 %
identity (IR-spectrum)	.passes test
density (20°/4°)	0,787 - 0,791
resistivity	.min. 5 MΩ·cm
acidity	max. 0,0003 meq/g
alkalinity	max. 0,0006 meq/g
chlorides (Cl)	max. 0,0001 %
sulfates (SO ₄)	max. 0,0001 %
copper (Cu)	max. 0,01 ppm
iron (Fe)	max. 0,01 ppm
lead (Pb)	max. 0,01 ppm

magnesium (Mg)	.max. 0,1 ppm
manganese (Mn)	.max. 0,01 ppm
nickel (Ni)	.max. 0,01 ppm
zinc (Zn)	.max. 0,01 ppm
aldehydes (as HCHO)	.max. 0,0002 %
ethanol (G.C.)	.max. 0,01 %
methanol (G.C.)	.max. 0,05 %
2-propanol (G.C.)	.max. 0,05 %
substances reducing KMnO ₄	.passes test
residue on evaporation	.max. 0,0005 %
water (K.F.)	.max. 0,1 %

ART. NO.	VOLUME	CONTAINER
AC0320005P	5 l	0

ACETONE-D6

AC0322 Acetone-d6, deuteration degree min. 99,8%, NMR spectroscopy grade, Spectrosol®



- Synonyms: Hexadeuteroacetone
- C₃D₆O
- M = 64,12 g/mol
- CAS [666-52-4]
- EINECS-No.: 211-563-9
- Density: 0,87 g/cm³
- Solub. in water: (20 °C): miscible
- Melting point: -95,4 °C
- Boiling point: 56 °C
- Flash pt. < -20 °C
- Ignition temp.: 540 °C
- Vapour pressure: (20 °C) 233 hPa
- Dielectric const.: (25 °C) 20,7
- LD 50 (oral, rat): 5800 mg/kg
- EC-Index-No.: 606-001-00-8
- ADR: 3 F1 II UN 1090
- IMDG: 3 II UN 1090
- IATA/ICAO: 3 II UN 1090
- GHS-signal word: Danger
- GHS-H sentences: H225 - H319 - H336 - EUH066
- GHS-P sentences: P210 - P241 - P303 + P361 + P353 - P305 + P351 + P338 - P405 - P501a
- Tariff number: 2845 90 10 00
- Applications: for nuclear magnetic resonance spectroscopy.

deuteration degree min. 99,8 %
water (K.F., H₂O + D₂O) max. 0,03 %
performance test (NMR-spectrum)passes test

ART. NO.	VOLUME	CONTAINER
AC03220010	10 ml	0

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:

Potassium iodide - ACS reagent, ≥99.0%

Product Number: 221945

CAS Number: 7681-11-0

MDL: MFCD00011405

Formula: IK

Formula Weight: 166.00 g/mol

**TEST****Specification**

Appearance (Color) White

Appearance (Form) Crystals

X-Ray Diffraction Conforms to Structure

Titration by Potassium Iodate > 99.0 %

Loss on Drying ≤ 0.2 %

Insoluble matter ≤ 0.005 %

Barium ≤ 0.002 %

Miscellaneous Assay ≤ 0.01 %

Chloride and Bromide

Iron (Fe) ≤ 3 ppm

Heavy Metal ≤ 5 ppm

As Lead

Miscellaneous Assay ≤ 3 ppm

Iodate

Calcium (Ca) ≤ 0.002 %

Magnesium (Mg) ≤ 0.001 %

Sodium (Na) ≤ 0.005 %

pH 6.0 - 9.2

At 25°C; c = 5%; Water

Phosphate (PO₄) ≤ 0.001 %Sulfate (SO₄) ≤ 0.005 %

Meets ACS Requirements Current ACS Specification

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d)	Điểm/khoảng nóng chảy/đông đặc	Điểm/khoảng nóng chảy: 681 °C
e)	Điểm sôi/khoảng sôi ban đầu	chưa có dữ liệu
f)	Khả năng bắt cháy (chất rắn, khí)	Sản phẩm không dễ cháy.
g)	Giới hạn trên/dưới của tính dễ cháy hoặc dễ nổ	chưa có dữ liệu
h)	Điểm cháy	Không áp dụng được
i)	Nhiệt độ tự bốc cháy	chưa có dữ liệu
j)	Nhiệt độ phân hủy	chưa có dữ liệu
k)	Độ pH	Khoảng 6.9 ở 50 g/l ở 20 °C
l)	Độ nhớt	Độ nhớt, động học: chưa có dữ liệu Độ nhớt, động lực: chưa có dữ liệu
m)	Độ hòa tan trong nước	Khoảng 1,430 g/l ở 25 °C - hòa tan hoàn toàn
n)	Hệ số phân tán: n-octanol/nước	Không áp dụng cho các chất vô cơ
o)	Áp suất hóa hơi	Khoảng 1 hPa ở 745 °C
p)	Mật độ	3.13 g/cm ³ ở 20 °C
	Tỷ trọng tương đối	chưa có dữ liệu
q)	Tỷ trọng hơi tương đối	chưa có dữ liệu
r)	Đặc điểm hạt	chưa có dữ liệu
s)	Đặc tính cháy nổ	chưa có dữ liệu
t)	Đặc tính ôxy hóa	không

9.2 Thông tin an toàn khác

chưa có dữ liệu

Phần 10: Tính ổn định và tính phản ứng

10.1 Khả năng phản ứng

chưa có dữ liệu

SIGALD- 221945

Trang 7 của 14

The life science business of Merck operates as MilliporeSigma in the US and Canada



Bảo vệ cơ thể

Quần áo bảo hộ chống tĩnh điện và chống cháy.

Bảo vệ hô hấp

Loại bộ lọc đề xuất: Bình lọc A (theo DIN 3181) cho hơi của các hợp chất hữu cơ

Công ty phải đảm bảo rằng việc bảo trì, lau chùi và kiểm tra thi dẫn của nhà sản xuất. Các phương pháp này phải được lập thành

Kiểm soát việc phơi nhiễm môi trường

Không để sản phẩm đi vào hệ thống cống rãnh. Nguy cơ nổ.

Phần 9: Các tính chất vật lý và hóa học

9.1 Thông tin cơ bản về các đặc tính vật lý và hóa học



3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:
HYDROCHLORIC ACID, 37%, A.C.S. REAGENT &

Product Number: **320331**
 CAS Number: 7647-01-0
 MDL: MFCD00011324

HCl

TEST

Specification

Appearance (Clarity)	Clear
Free from Suspended Matter or Sediment	
Appearance (Color)	Colorless
Appearance (Form)	Liquid
Color Test	≤ 10 APHA
Titration with NaOH	36.5 - 38.0 %
Residue on Ignition (ppm)	≤ 5 ppm
Arsenic (As)	≤ 0.01 ppm
Bromide	≤ 0.005 %
Iron (Fe)	≤ 0.2 ppm
Free Chlorine	≤ 1 ppm
Heavy Metals (by ICP)	≤ 1 ppm
Ammonium	≤ 3 ppm
Sulfite (ppm)	≤ 1 ppm
Sulfate	≤ 1 ppm
Meets ACS Requirements	Current ACS Specification
Recommended Retest Period	-----
2 years	

Specification: PRD.5.ZQ5.10000055701

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- a) Physical state liquid
- b) Color light yellow
- c) Odor pungent
- d) Melting point/freezing point -30 °C
- e) Initial boiling point and boiling range > 100 °C
- f) Flammability (solid, gas) No data available
- g) Upper/lower flammability or explosive limits No data available
- h) Flash point Not applicable
- i) Autoignition temperature Not applicable
- j) Decomposition temperature No data available
- k) pH No data available
- l) Viscosity Viscosity, kinematic: No data available
Viscosity, dynamic: 2,3 mPa.s at 15 °C
- m) Water solubility soluble
- n) Partition coefficient: n-octanol/water No data available
- o) Vapor pressure 226,636 hPa at 21,1 °C
546,596 hPa at 37,7 °C
- p) Density 1,18 g/mL at 25 °C
- Relative density No data available
- q) Relative vapor density No data available
- r) Particle characteristics No data available

- s) Explosive properties Not classified as explosive.
- t) Oxidizing properties none

9.2 Other safety information

No data available



Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name Nitric acid puriss., 64-66%

Product Number 07006

Product Brand SIGALD

CAS Number 7697-37-2

Molecular Weight 63.01

TEST

SPECIFICATION

ASSAY 64 - 66 %

SULFATED ASH ≤ 0.0005 %

ARSEN ≤ 0.0001 %

CALCIUM ≤ 0.0005 %

IRON ≤ 0.0001 %

CHLORIDE (CL) ≤ 0.0001 %

SULFATE (SO₄) ≤ 0.0002 %

RECOMMENDED RETEST PERIOD 18 Months

PROPERTIES

vapor pressure

8 mmHg (20 °C)

grade

puriss.

Assay

64-66%

impurities

≤0.0005% heavy metals (as Pb)

ign. residue≤0.0005% (as SO₄)**bp**

120.5 °C (lit.)

density

1.37-1.41 g/mL at 20 °C (lit.)

anion traceschloride (Cl⁻): ≤1 mg/kgsulfate (SO₄²⁻): ≤2 mg/kg**cation traces**

As: ≤1 mg/kg

Ca: ≤5 mg/kg

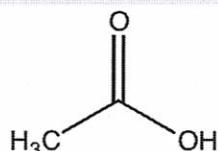
Fe: ≤1 mg/kg

SMILES string

O[N+](=[O-])=O

Identification

CH₃COOH
M = 60,05 g/mol
CAS [64-19-7]
EC number: 200-580-7
Taric code: 2915 21 00



Synonyms

Methane carboxylic acid, Methylformic acid

Applications

laboratory reagent, synthesis of organic products, in the rubber industry, in food industry.

Specifications

assay (acidimetric).....	min. 99,8 %
identity (IR-spectrum).....	passes test
density (20°/4°).....	1,048 - 1,050
boiling point.....	117 - 119 °C
freezing point.....	min. 15,8 °C
colour (Hazen).....	max. 10
titrable base.....	max. 0,0004 meq/g
chlorides (Cl).....	max. 0,00004 %
phosphates (as PO ₄).....	max. 0,00004 %
sulfates (SO ₄).....	max. 0,00004 %
aluminium (Al).....	max. 0,02 ppm
arsenic (As).....	max 0,01 ppm
barium (Ba).....	max 0,01 ppm
beryllium (Be).....	max. 0,005 ppm
bismuth (Bi).....	max. 0,05 ppm
boron (B).....	max. 0,1 ppm
cadmium (Cd).....	max. 0,02 ppm
calcium (Ca).....	max. 0,1 ppm
chromium (Cr).....	max. 0,02 ppm
cobalt (Co).....	max 0,01 ppm
copper (Cu).....	max 0,01 ppm
gallium (Ga).....	max. 0,05 ppm
germanium (Ge).....	max. 0,02 ppm
gold (Au).....	max 0,01 ppm
heavy metals (as Pb).....	max. 0,5 ppm
indium (In).....	max. 0,05 ppm
iron (Fe).....	max. 0,05 ppm

lead (Pb).....	max 0,01 ppm
lithium (Li).....	max 0,01 ppm
magnesium (Mg).....	max. 0,05 ppm
manganese (Mn).....	max 0,01 ppm
mercury (Hg).....	max. 0,005 ppm
molybdenum (Mo).....	max 0,01 ppm
nickel (Ni).....	max. 0,02 ppm
platinum (Pt).....	.max. 0,1 ppm
potassium (K).....	max. 0,1 ppm
silver (Ag).....	max. 0,005 ppm
sodium (Na).....	max. 0,2 ppm
strontium (Sr)	max 0,01 ppm
thallium (Tl).....	max. 0,02 ppm
tin (Sn).....	max. 0,05 ppm
titanium (Ti).....	max. 0,05 ppm
vanadium (V).....	max 0,01 ppm
zinc (Zn).....	max. 0,03 ppm
zirconium (Zr).....	max. 0,05 ppm
acetaldehyde (CH ₃ CHO).....	max. 0,0002 %
acetic anhydride (CH ₃ CO) ₂ O.....	max. 0,01 %
substances reducing KMnO ₄	passes test
substances reducing K ₂ Cr ₂ O ₇	passes test
miscibility with water.....	total
dilution test.....	passes test
substances reducing iodine.....	negative reaction
residue on evaporation.....	max. 0,0005 %
water (K.F.).....	max. 0,2 %

Physical data

- Density: 1,05 g/cm³
- Solub. in water: (20 °C): miscible
- Melting point: 17 °C
- Boiling point: 117 °C
- Flash point: 39 °C
- Ignition temperature: 485 °C
- Vapour pressure: (20 °C) 15,4 hPa
- Refraction index: (20 °C) 1,37
- Expl. limit (upper): 19,9 Vol%
- Expl. limit (lower): 4 Vol%
- pH(50 g/l H₂O, 20 °C) 2,5

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



Specification Sheet

Product Name Ammonium citrate tribasic ≥97%
(titration)

Product Number A1332

Product Brand SIGMA

CAS Number 3458-72-8

Molecular Weight 243.22

TEST SPECIFICATION

APPEARANCE (COLOR) White to Off White

APPEARANCE (FORM) Crystals

TITRATION ≥ 97 %

TITRATION (METHOD) N-DETERMINATION ACCORDING TO
KJELDAHL

RECOMMENDED RETEST PERIOD 72 MONTHS

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3050 Spruce Street, Saint Louis, MO 63103, USAWebsite: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:

Sodium hydroxide - ACS reagent, ≥97.0%, pellets

Product Number: 221465

CAS Number: 1310-73-2

MDL: MFCD00003548

Formula: HNaO

Formula Weight: 40.00 g/mol

NaOH

TEST**Specification**

Appearance (Color)	White
Appearance (Form)	Pellets
X-Ray Diffraction	Conforms to Structure
Titration by HCL	≥ 97.0 %
Impurity	≤ 1.0 %
% Na ₂ CO ₃ by HCl Titration	≤ 0.003 %
Sulfate (SO ₄)	≤ 0.005 %
Chloride Content	≤ 0.001 %
Nitrogen Compounds (as N)	≤ 0.001 %
Phosphate (PO ₄)	≤ 0.002 %
Heavy Metals (as Ag)	≤ 0.001 %
Iron (Fe)	≤ 0.001 %
Nickel (Ni)	≤ 0.001 %
Mercury (Hg)	≤ 0.1 ppm
Calcium (Ca)	≤ 0.005 %
Magnesium (Mg)	≤ 0.002 %
Potassium (K)	≤ 0.02 %
Meets ACS Requirements	Current ACS Specification
Recommended Retest Period	-----
2 Years	-----

Specification: PRD.2.ZQ5.10000005009

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PROPERTIES

grade

ACS reagent

Quality Level

200

vapor density

>1 (vs air)

vapor pressure

<18 mmHg (20 °C)

3 mmHg (37 °C)

Assay

≥97.0%

form

pellets

technique(s)

cell culture | mammalian: suitable

titration: suitable

impurities

≤0.001% N compounds

≤0.02% NH₄OH ppt.

≤1.0% Na₂CO₃

mp

318 °C (lit.)

solubility

water: soluble 1,260 g/L at 20 °C

Show

More



19
3050 Spruce Street, Saint Louis, MO 63103, USAWebsite: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:

Sulfuric acid - ACS reagent, 95.0-98.0%

Product Number:

258105

H₂SO₄

CAS Number:

7664-93-9

Formula:

H₂O₄S

Formula Weight:

98.08 g/mol

TEST**Specification**

Appearance (Clarity)

Clear

Appearance (Color)

Colorless

Appearance (Form)

Liquid

Free From Suspended Matter or Sediment

Purity (Titration by NAOH)

95.0 - 98.0 %

Residue on Ignition (ppm)

< 5 ppm

Color Test

< 10 APHA

Arsenic (As)

< 0.01 ppm

Chloride (CL)

< 0.2 ppm

Iron (Fe)

< 0.2 ppm

Mercury (Hg)

< 5 ppb

Heavy Metal (as Pb)

< 1 ppm

(as Pb)

Ammonium

< 2 ppm

Nitrate (ppm)

< 0.5 ppm

Subs Red Permanganate (ppm)

< 2 ppm

(as SO₂)

Meets ACS Requirements

Current ACS Specification

10th Edition

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3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:

Potassium hydroxide - ACS reagent, ≥85%, pellets

Product Number: 221473

CAS Number: 1310-58-3

MDL: MFCD00003553

Formula: HKO

Formula Weight: 56.11 g/mol

KOH**TEST****Specification**

Appearance (Color)	White
Appearance (Form)	Pellets
X-Ray Diffraction	Conforms to Structure
Titration by HCL % KOH	≥ 85.00 %
Titration by HCL % K ₂ CO ₃	≤ 2.00 %
Chloride Content	≤ 0.01 %
Nitrogen Compounds	≤ 0.001 %
Phosphate	≤ 5 ppm
Sulfate	≤ 0.003 %
Meets ACS Requirements	Current ACS Specification
Sodium (Na)	≤ 0.05 %
Calcium (Ca)	≤ 0.005 %
Magnesium (Mg)	≤ 0.002 %
Iron (Fe)	≤ 0.001 %
Heavy Metals by ICP-OES	≤ 0.001 %
Nickel (Ni)	≤ 0.001 %
Note	Confirmed
Material Typically Contains 10%-15% Water	
Recommended Retest Period	-----
2 Years	

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Physical state | pellets |
| b) Color | colorless |
| c) Odor | odorless |
| d) Melting point/freezing point | Melting point/range: 361 °C - lit. |
| e) Initial boiling point and boiling range | 1.327 °C at 1.013 hPa |
| f) Flammability (solid, gas) | No data available |
| g) Upper/lower flammability or explosive limits | No data available |
| h) Flash point | Not applicable |
| i) Autoignition temperature | No data available |
| j) Decomposition temperature | No data available |
| k) pH | ca.13,5 at 5,6 g/l at 25 °C |
| l) Viscosity | Viscosity, kinematic: No data available
Viscosity, dynamic: No data available |
| m) Water solubility | 1.130 g/l at 20 °C |
| n) Partition coefficient: n-octanol/water | Not applicable for inorganic substances |
| o) Vapor pressure | 1 hPa at 719 °C |
| p) Density | 2,04 g/cm ³ at 20 °C |
| Relative density | No data available |
| q) Relative vapor density | No data available |
| r) Particle characteristics | No data available |
| s) Explosive properties | No data available |

