QUÍMICA GERAL LABORATÓRIO

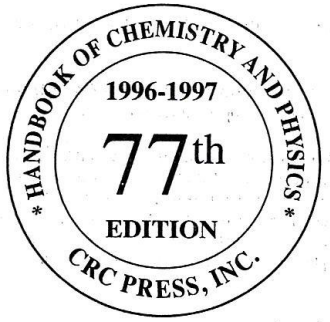
FASB

Faculdade São Bernardo

Professor: Wagner Alves Moreira

CRC Handbook of Chemistry and Physics

A Ready-Reference Book of Chemical and Physical Data



Editor-in-Chief

David R. Lide, Ph.D.

Former Director, Standard Reference Data
National Institute of Standards and Technology

Associate Editor

H. P. R. Frederikse, Ph.D.
(Retired)
Ceramics Division
National Institute of Standards and Technology

CRC Press

Boca Raton New York London Tokyo

TABLE OF CONTENTS

SECTION 6: FLUID PROPERTIES

SECTION 7: BIOCHEMISTRY

SECTION 8: ANALYTICAL CHEMISTRY

SECTION 9: MOLECULAR STRUCTURE AND SPECTROSCOPY

SECTION 10: ATOMIC, MOLECULAR, AND OPTICAL PHYSICS

SECTION 11: NUCLEAR AND PARTICLE PHYSICS

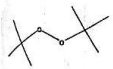
SECTION 12: PROPERTIES OF SOLIDS

PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS (continued)

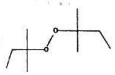
No.	Name Synonym	Mol. Form. Mol. Wt.	CAS RN mp/°C	Merck No. bp/°C	Beil. Ref. den/g cm^{-3}	Solubility n_D
9194	2,3-Phenazinediamine 2,3-Diaminophenazine	$C_{12}H_{10}N_4$ 210.24	655-86-7 264	2960 sub	4-25-00-03028	bz 4; EtOH 4
9195	Phenazine, 2-methyl- Tolazine	$C_{13}H_{10}N_2$ 194.24	1016-94-0 118.5	 350	5-23-08-00475	eth 4; EtOH 4; chl 4
9196	Phenazinium, 1-hydroxy-5-methyl-, hydroxide, inner salt Pyocyanine	$C_{13}H_{10}N_2O$ 210.24	85-66-5 133 dec	7965	5-24-04-00100	H_2O 2; EtOH 3; eth 1; ace 3
9197	1-Phenazinol Hemipyocyanine	$C_{12}H_8N_2O$ 196.21	528-71-2 158	4564 sub	5-23-12-00297	H_2O 2; EtOH 2; bz 3; os 4
9198	Phenmedipham Carbamic acid, (3-methylphenyl)-, 3-[(methoxycarbonyl)amino]phenyl ester	$C_{16}H_{16}N_2O_4$ 300.31	13684-63-4 143	7199		
9199	Phenol Hydroxybenzene	C_6H_6O 94.11	108-95-2 40.9	7206 181.8	4-06-00-00531 1.0545^{45}	H_2O 3; EtOH 3; eth 4; ace 5 1.5408^{41}

In numeric order as they occur in the Table of Physical Constants of Organic Compounds

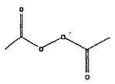
9153



9154



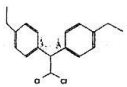
9156



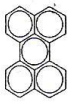
9158

9159

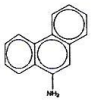
9160



9161

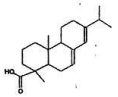


9162

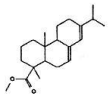


9164

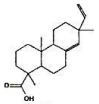
9167



9168



9170



9171

9172

9173

9174

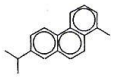
9179

9180

9181

9182

9183



9184

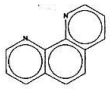
9185

9186

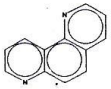
9187

9188

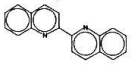
9189



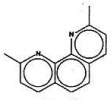
9190



9191

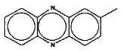


9192

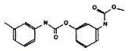


9193

9195



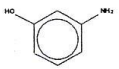
9198



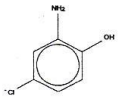
9199

9201

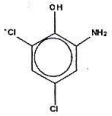
9202



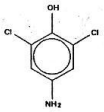
9204



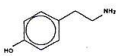
9205



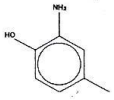
9206



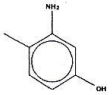
9208



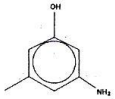
9210



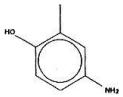
9211



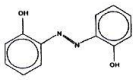
9212



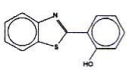
9213



9216



9217



THE
MERCK INDEX

AN ENCYCLOPEDIA OF
CHEMICALS, DRUGS, AND BIOLOGICALS

THIRTEENTH EDITION

Editorial Staff

Maryadele J. O'Neil, *Senior Editor*
Ann Smith, *Senior Associate Editor*
Patricia E. Heckelman, *Associate Editor*

John R. Obenchain Jr., *Editorial Assistant*
Jo Ann R. Gallipeau, *Technical Assistant*
Mary Ann D'Arecca, *Administrative Associate*

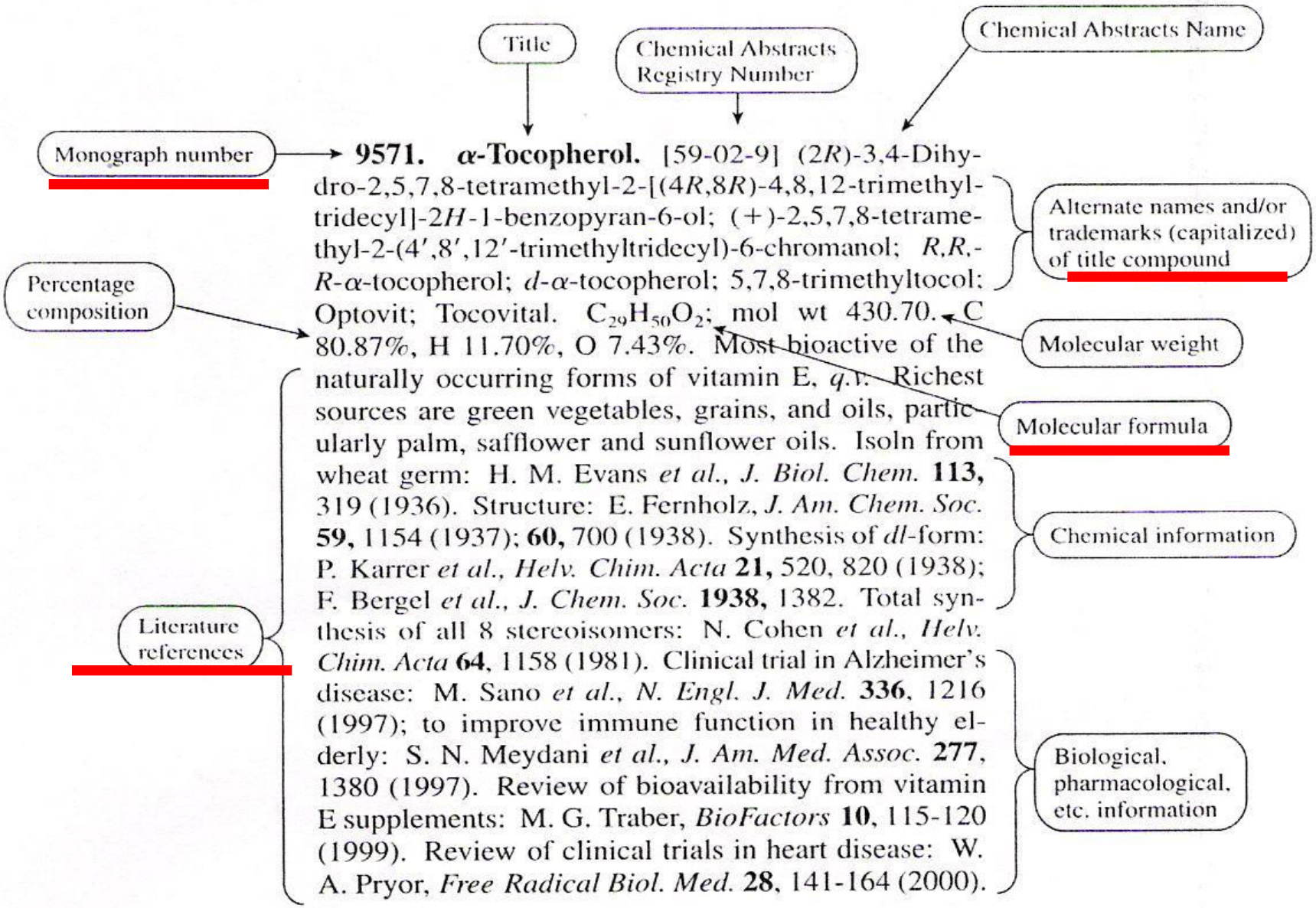
Susan Budavari, *Editor Emeritus*

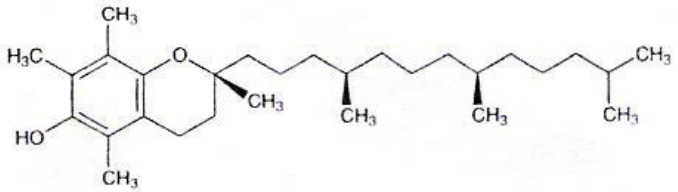
Published by
Merck Research Laboratories
Division of

MERCK & CO., INC.
Whitehouse Station, NJ

2001

TABLE OF CONTENTS


Title
Chemical Abstracts Registry Number
Chemical Abstracts Name
Monograph number
9571. α-Tocopherol. [59-02-9] (2R)-3,4-Dihydro-2,5,7,8-tetramethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-2H-1-benzopyran-6-ol; (+)-2,5,7,8-tetramethyl-2-(4′,8′,12′-trimethyltridecyl)-6-chromanol; R,R,R-α-tocopherol; d-α-tocopherol; 5,7,8-trimethyltocol; Optovit; Tocovital. C29H50O2; mol wt 430.70. C 80.87%, H 11.70%, O 7.43%. Most bioactive of the naturally occurring forms of vitamin E, q.v. Richest sources are green vegetables, grains, and oils, particularly palm, safflower and sunflower oils. Isoln from wheat germ: H. M. Evans et al., J. Biol. Chem. 113, 319 (1936). Structure: E. Fernholz, J. Am. Chem. Soc. 59, 1154 (1937); 60, 700 (1938). Synthesis of dl-form: P. Karrer et al., Helv. Chim. Acta 21, 520, 820 (1938); F. Bergel et al., J. Chem. Soc. 1938, 1382. Total synthesis of all 8 stereoisomers: N. Cohen et al., Helv. Chim. Acta 64, 1158 (1981). Clinical trial in Alzheimer's disease: M. Sano et al., N. Engl. J. Med. 336, 1216 (1997); to improve immune function in healthy elderly: S. N. Meydani et al., J. Am. Med. Assoc. 277, 1380 (1997). Review of bioavailability from vitamin E supplements: M. G. Traber, BioFactors 10, 115-120 (1999). Review of clinical trials in heart disease: W. A. Pryor, Free Radical Biol. Med. 28, 141-164 (2000).
Alternate names and/or trademarks (capitalized) of title compound
Percentage composition
Molecular weight
Molecular formula
Chemical information
Literature references
Biological, pharmacological, etc. information



Transparent needles, mp 2.5-3.5°. $[\alpha]_{546.1}^{25}$ −3.0° (benzene); $[\alpha]_{546.1}^{25}$ +0.32° (ethanol).

Acetate. [58-95-7] Spondyvit. $C_{31}H_{52}O_3$; mol wt 472.74. Light yellow oil. Crystallized at −30° as needle-like crystals, mp 26.5-27.5°. $[\alpha]_D^{25}$ +0.25° (c = 10 in chloroform); $[\alpha]_D^{25}$ +3.2° (in ethanol).

***dl*-α-Tocopherol acetate.** [52225-20-4] *dl*-α-Tocopheryl acetate; Detulin; Ephynal; Eusovit; Evion. Comprehensive description: B. C. Rudy, B. Z. Senkowski, *Anal. Profiles Drug Subs.* **3,** 111-126 (1974). Pale yellow, viscous liquid. mp −27.5°. $d_4^{21.3}$ 0.9533. $bp_{0.01}$ 184°; $bp_{0.025}$ 194°; $bp_{0.3}$ 224°. n_D^{20} 1.4950-1.4972. uv max (cyclohexane): 285.5 nm. Practically insol in water. Freely sol in acetone, chloroform, ether. Less readily sol in alc.

USE: As an antioxidant in vegetable oils and shortening.

THERAP CAT: Vitamin E supplement.

THERAP CAT (VET): Vitamin E supplement.

Structure

Physical data for title compound

Derivative Compound Registry Number

Alternate names and/or trademarks (capitalized) of the derivative compound

Derivatives of title compound

Non-medical use

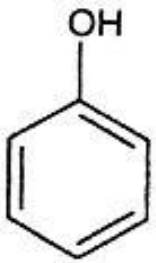
Derivative Compound Literature references

Physical data for derivative

Therapeutic category (in humans)

Therapeutic category (veterinary)

7323. Phenol. [108-95-2] Carbolic acid; phenic acid; phenylic acid; phenyl hydroxide; hydroxybenzene; oxybenzene. C_6H_6O; mol wt 94.11. C 76.57%, H 6.43%, O 17.00%. Obtained from coal tar, or made by fusing sodium benzenesulfonate with NaOH, or by heating monochlorobenzene with aq NaOH under high pressure. The crystalline article of commerce contains at least 98% phenol. Review of mfg processes: A. Dierichs, R. Kubicka, *Phenole und Basen, Vorkommen und Gewinnung* (Akademie-Verlag, Berlin, 1958) 472 pp; *Faith, Keyes & Clark's Industrial Chemicals,* F. A. Lowenheim, M. K. Moran, Eds. (Wiley-Interscience, New York, 4th ed., 1975) pp 612-623. Use in treatment of spasticity: D. E. Garland *et al., Clin. Orthop.* **165,** 217 (1982); *eidem, Arch. Phys. Med. Rehab.* **65,** 243 (1984). Review of use in pain relief: K. M. Wood, *Pain* **5,** 205-229 (1978). Review of toxicology: H. Babich, D. L. Davis, *Regul. Toxicol. Pharmacol.* **1,** 90-109 (1981). Toxicity: W. B. Deichmann, S. Witherup, *J. Pharmacol. Exp. Ther.* **80,** 233 (1944). *Review:* C. Thurman in *Kirk-Othmer Encyclopedia of Chemical Technology* **vol. 17** (Wiley-Interscience, New York, 3rd ed., 1982) pp 373-384.



Colorless, acicular crystals or white, crystalline mass. Characteristic odor, somewhat sickeningly sweet and acrid with a sharp and burning taste. *Poisonous and caustic!* Prone to redden on exposure to air and light, hastened by presence of alkalinity. d 1.071. When free from water and cresols it congeals at 41° and melts at 43°. Ultrapure material mp 40.85°. The commercial product contains an impurity which raises the mp. bp 182°. Flash pt, closed cup: 175°F (79°C). n_D^{41} 1.5425. pKa at 25° = 10.0. pH of aq solns ~6.0. It is liquefied by mixing with ~8% water. One gram dissolves in ~15 ml water, 12 ml benzene; very sol in alcohol, chloroform, ether, glycerol, carbon disulfide, petrolatum, volatile and fixed oils, aq alkali hydroxides. Almost insol in petr ether. LD_{50} orally in rats: 530 mg/kg (Deichmann, Witherup). *Keep well closed and protected from light. Do not handle with bare hands.*

FASB – QUÍMICA / LABORATÓRIO

ELEMENTOS DO RELATÓRIO

Um relatório tem como função organizar, por meio de registros escritos, as informações, dados, pesquisas, resultados e conclusões de um trabalho. Esta organização deve ser feita de forma clara, detalhada e cuidadosa, para que quem esteja lendo possa entender e até mesmo repetir o que foi feito.

Todo relatório deve ter sempre o estilo ***IMPESSOAL***, utilizando – se voz passiva no passado, pois se relata algo que já foi feito. Por exemplo, no lugar de *" eu pesei uma massa de ....."*, utilize expressões do tipo *"a massa da amostra foi determinada ...."* ou, "d*eterminou – se a massa da amostra..."* .

A seguir são listados os principais itens que um relatório deve conter no próprio corpo do modelo de relatório.

MUITO CUIDADO COM O EMPREGO DA PALAVRA ***ATRAVÉS*** do termo ***O MESMO***!

Estudo do bico de Bunsen

- Pesquisa no Merck Index
- **Número monográfico, nomes adicionais, referencias da literatura, propriedades (ponto de fusão e ponto de ebulição ao nível do mar (760 mmHg), dados de toxidez), cuidados e usos dos seguintes compostos: propano, butano, ácido clorídrico e nitrato de potássio.**
- **Trazer digitado no corpo do relatório da aula intitulada LAMPARINA na próxima aula.**