

Hawley's
**Condensed Chemical
Dictionary**
Fifteenth Edition

Richard J. Lewis, Sr.

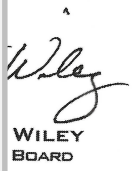


ONS

ley first
neration
lping to
ne midst
ding the
cal, and
ne 20th
nd their
s there,
of ideas,

ourney,
ir needs
the way
nowledge
s.

you the



Dedicated to

Copyright © 2007 by John Wiley & Sons, Inc., New York. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 750-4470, or on the web at www.copyright.com.

Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 222 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permission>.

Limit of Liability/Disclaimer of Warranty. While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability of fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss or profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some contents that appears in print may not be available in electronic formats. For more information about Wiley products, visit our web site at www.wiley.com.

Library of Congress Cataloging-in-Publication Data is available.

Lewis, Richard J., Sr.
Hawley's Condensed Chemical Dictionary, Fifteenth Edition
ISBN 13: 978-0-471-76865-4
ISBN 10: 0-471-76865-0

grosopic. Decomposes above 220C. Very soluble in water; resistant to acid decomposition. Produced by *N*-acylation of α -phenoxypropionic acid and G-aminopenicillanic acid (produced by fermentation using *Penicillium chrysogenum*).

Grade: NF.

Use: Antibiotic.

potassium phenoxymethylpenicillin. (potassium penicillin V).

CAS: 132-98-9. $KC_{16}H_{17}N_2O_5S$.

Properties: White, crystalline powder; odorless. Very soluble in water; slightly soluble in alcohol; insoluble in acetone.

Grade: USP.

Use: Antibiotic.

potassium phosphate, dibasic. (DKP; potassium hydrogen phosphate; potassium monophosphate; dipotassium orthophosphate). K_2HPO_4 .

Properties: Hygroscopic, white crystals or powder. Very soluble in water. Converted to pyrophosphate by ignition.

Derivation: Action of phosphoric acid on potassium carbonate.

Grade: Commercial, pure, highest purity, NF, FCC.

Use: Buffer in antifreezes; ingredient of "instant" fertilizers; nutrient for penicillin culturing; humectant; in pharmaceuticals; foods as a buffer, sequestrant, and yeast food; and as a laboratory reagent.

potassium phosphate, monobasic. (MKP; potassium acid phosphate; potassium diphosphate; potassium orthophosphate; potassium dihydrogen phosphate). KH_2PO_4 .

Properties: Colorless crystals. D 2.338, mp 253C. Acid in reaction; soluble in water; insoluble in alcohol.

Derivation: Action of phosphoric acid on potassium carbonate.

Grade: Technical, CP, FCC.

Use: Baking powder, nutrient solutions, yeast foods, buffer and sequestrant, lab reagent.

potassium phosphate, tribasic. (potassium phosphate, neutral; potassium phosphate normal; tripotassium orthophosphate; potassium phosphate, tertiary; tripotassium phosphate). K_3PO_4 .

CAS: 7778-53-2. $K_3PO_4 \cdot H_2O$ or K_3PO_4 .

Properties: Granular, white powder; deliquescent. Mp (anhydrous) 1,340C, d (anhydrous) 2.564 (17C). Soluble in water giving strongly basic solution. Insoluble in alcohol.

Grade: Reagent, technical, FCC.

Use: Purification of gasoline, water softening, liquid soaps, fertilizer, in foods as an emulsifier, laboratory reagent.

water; insoluble in alcohol; slowly oxidized by air to phosphate.

potassium platinumchloride. See potassium chloroplatinate.

potassium polymetaphosphate. $(KPO_3)_n$.

The molecular weight may be as high as 500,000.

Properties: White powder; odorless. Insoluble in water; soluble in sodium salt solutions that may have high viscosity.

Derivation: Dehydration of monobasic potassium phosphate.

Grade: Technical, FCC.

Use: Fat emulsifier and moisture-retaining agent in foods.

See sodium metaphosphate.

potassium polysulfide. K_2S_n .

Properties: Crystals. Soluble in water and alcohol.

Hazard: Moderate fire risk. Toxic by ingestion, irritant to skin and eyes.

Use: Fungicide.

potassium prussiate, red. See potassium ferricyanide.

potassium prussiate, yellow. See potassium ferrocyanide.

potassium 3-pyridinecarboxylate. See potassium nicotinate.

potassium pyroantimonate.

$K_2H_3SbO_7 \cdot 4H_2O$.

Properties: White, crystalline powder or granules. Slightly soluble in cold water; readily soluble in hot water; insoluble in alcohol.

Grade: Reagent, technical.

Use: Starch sizes and flame-retarding compounds.

potassium pyroborate. See potassium tetraborate.

potassium pyrophosphate. (TKPP; tetrapotassium pyrophosphate; potassium pyrophosphate, normal). $K_4P_2O_7 \cdot 3H_2O$.

Properties: Colorless crystals or white powder. Somewhat hygroscopic in air (deliquescent at a relative humidity of above 40–45%). Similar to tetrasodium pyrophosphate except for greater solubility. D 2.33, dehydrates at about 300C, mp 1,090C. Soluble in water; insoluble in alcohol.

Grade: Technical, 99.4%, 60% solution, FCC.

Use: Soap and detergent builder, sequestering agent, peptizing and dispersing agent.

potassium pyrosulfate. (potassium acid sul-

blue metallic
odorless. D
lizing materi-
anol; decom-

nganate in an
olution of the
ide; on cool-
ne permanga-

risk in contact
dizing agent.
, bleach, dye,
of skin, re-
e (antiseptic),
ir and water

sium os-

decomposes

in oxygen.
risk in contact
g agent. Irri-

oxygen-gen-

potassium

See

m persul-

decomposes
le in alcohol.
d solution of

agent. TLV:
0.1 mg/m³).
terials.

ing agent in
ture, analyti-
pharmaceuti-
uring agent,

in. (po-

POTASSIUM PYROSULFITE

1036

Use: Acid flux in analysis, laboratory reagent.

potassium pyrosulfite. See potassium metabisulfite.

potassium rhodanide. See potassium thiocyanate.

potassium ricinoleate. $C_{17}H_{32}OHCOOK$.

Properties: White paste. Soluble in water. Combustible.

Use: Emulsifying agent.

potassium silicate.

Properties: (Solid) Weight ratio $SiO_2:K_2O$ varies with grade from 2.1:1 to 2.5:1; colorless anhydrous lump, shattered or granular. Soluble in water at high temperature and pressure; insoluble in alcohol. (Solution) Colorless liquid, Bé range 29–48 degrees.

Derivation: Supercooled melt of potassium carbonate and pure silica sand.

Use: (Solid) Manufacture of glass and refractory material, welding rods, high-temperature mortars, binder in carbon arc-light electrodes, detergents, catalyst, adhesives.

potassium silicofluoride. See potassium fluosilicate.

potassium sodium carbonate. See sodium potassium carbonate.

potassium sodium ferricyanide.

$K_2NaFe(CN)_6$.

Properties: Red crystals, over 99% pure. Mp (decomposes); nonhygroscopic and stable. Easily soluble in water.

Derivation: From ferrocyanides.

Use: Blueprint paper and photography.

potassium-sodium phosphate. See sodium-potassium phosphate.

potassium sodium tartrate. (Rochelle salt; sodium potassium tartrate).

CAS: 304-59-6. $KNaC_4H_4O_6 \cdot 4H_2O$. It is salt of L(+)-tartaric acid.

Properties: Colorless, transparent, efflorescent crystals or white powder; cool, saline taste. Unstable above 225C, d 1.77, mp 70–80C. Soluble in water, insoluble in alcohol, loses water of crystallization at 140C.

Derivation: Potassium acid tartrate is dissolved in water, the solution saturated with sodium carbonate, concentrated after purification, and crystallized.

potassium sorbate. (potassium-2,4-hexadecanoate).

CAS: 590-00-1. $CH_3CH:CHCH:CHCOOK$.

Properties: White powder. Mp 270C (decomposes), d 1.36 (25/20C). Soluble in water (25C).

Grade: Technical, FCC.

Use: Bacteriostat and preservative in meats, sausage casings, wines, etc.

potassium stannate.

CAS: 12125-03-0. $K_2SnO_3 \cdot 3H_2O$.

Properties: White to light-tan crystals. D 3.197. Soluble in water; insoluble in alcohol.

Grade: Technical.

Hazard: Highly toxic. TLV: 2 mg(Sn)/m³.

Use: Textiles (dyeing and printing), alkaline tin-plating bath.

potassium stearate. (stearic acid potassium salt).

CAS: 593-29-3. $C_{17}H_{35}COOK$.

Properties: White, crystalline powder; slight odor of fat. Mw 322.57. Soluble in hot water and alcohol.

Grade: Commercial, contains considerable palmitate; FCC.

Use: Anticaking agent, binder, emulsifier, stabilizer for chewing gum, base for textile softeners.

potassium strontium chlorate. See strontium potassium chlorate.

potassium styphnate. $KC_6H_2N_3O_8 \cdot H_2O$.

Properties: Yellow prisms. Mp loses water at 120C.

Hazard: Explodes when shocked or heated.

Use: High explosive.

potassium sulfate.

CAS: 7778-80-5. K_2SO_4 .

Properties: Colorless or white, hard crystals or powder; bitter saline taste. D 2.66, mp 1,072C. Soluble in water; insoluble in alcohol.

Derivation: (1) By treatment of potassium chloride either with sulfuric acid or with sulfur dioxide, air, and water (Hargreaves process); (2) by fractional crystallization of a natural sulfate ore; (3) from salt-lake brines.

Grade: Highest purity medicinal, commercial, crude, CP, agricultural, reagent, technical.

Use: Reagent in analytical chemistry, medicine (cathartic), gypsum cements, fertilizer for chloride-sensitive crops such as tobacco and citrus, alum manufacture, glass manufacture, food additive.

potassium sulfhydrate. See potassium hydrosulfide.

potassium sulfide.

CAS: 1312-73-8. K_2S .

Grade: Technical

Hazard: Flammable spontaneously, etc.

Use: Reagent in medicine.

potassium sulfite

CAS: 10117-38

Properties: White

water; sparingly

heating and slow

Grade: Technical

Use: Photographi

food and wine

potassium sulfite

thiocarbonate).

Properties: Yellow

scopically; soluble

Grade: Technical

Hazard: Toxic if

Use: Analysis (test

soil fumigant.

potassium sulfite

thiocyanate.

potassium sulfite

thiocyanate.

potassium tant

potassium fluoride

potassium tart

Properties: Colorless

soluble in water; it

heat (200–220C)

Grade: CP, technical

Use: Manufacture

(thartic), laboratory reagent

potassium tellu

Properties: Gradually

decomposes at

Use: Analysis (test

potassium tetr

ammonochromate

potassium tetr

Properties: White

soluble in alcohol

Use: Metal poling

industry.

potassium thiocyanide

potassium cyanide).