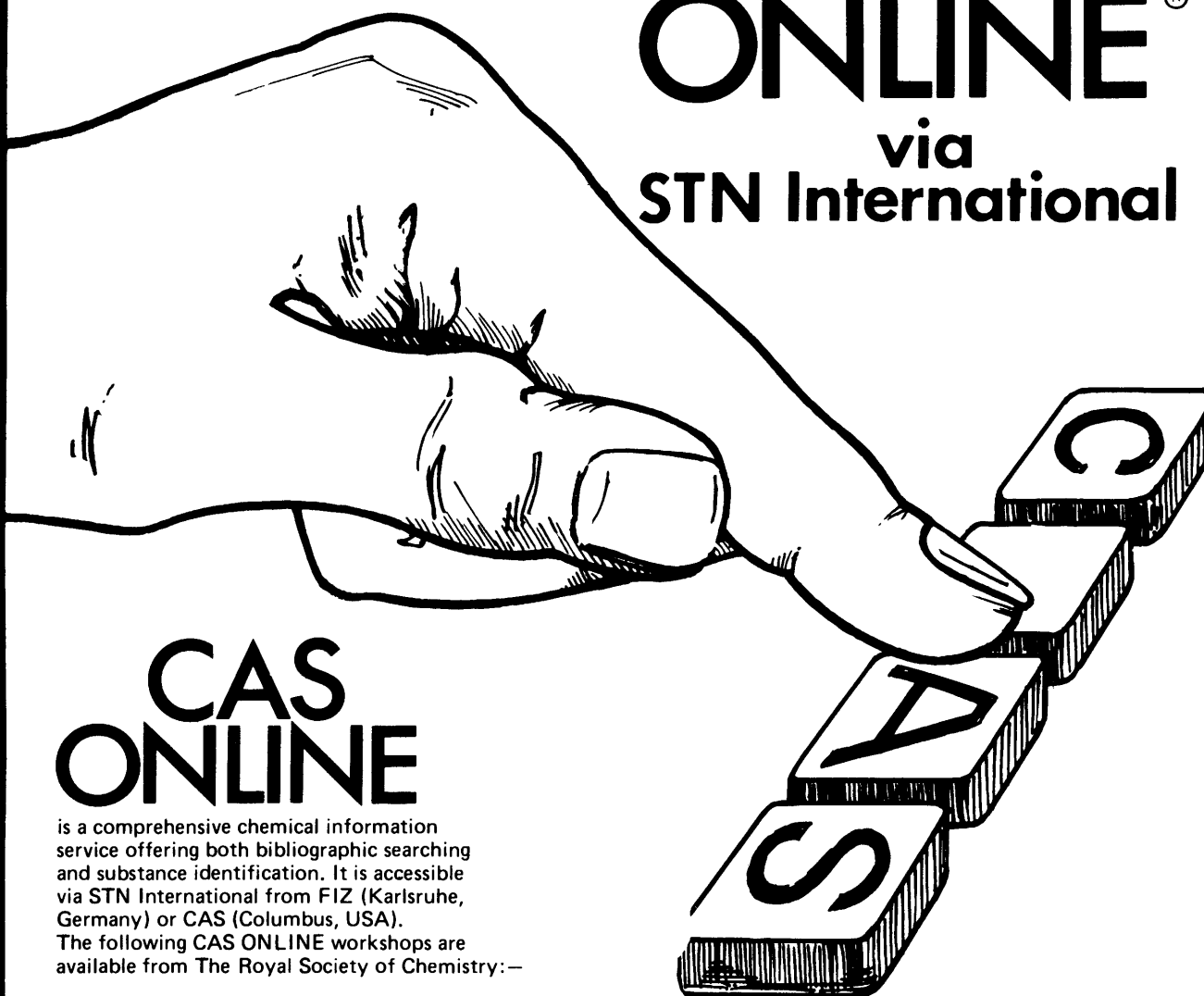


# Hands on..... CAS ONLINE<sup>®</sup> via STN International



## CAS ONLINE

is a comprehensive chemical information service offering both bibliographic searching and substance identification. It is accessible via STN International from FIZ (Karlsruhe, Germany) or CAS (Columbus, USA).

The following CAS ONLINE workshops are available from The Royal Society of Chemistry:—

### **An Introduction to Online Searching: The CA File for Chemists—**

... designed especially for chemists, engineers, and other scientists who have little or no experience in online searching. Topics covered include: what basic tools are needed to specify your search requirements, what information can be searched using those tools, and how to evaluate the results of your search. Hands-on practice is included.

### **The CA File—Basic Level—**

... covers the basics needed to search the bibliographic and index information in the CA File on CAS ONLINE. The course is designed for librarians and other information searchers who have experience in online searching but are new at searching the CA File on CAS ONLINE. Topics covered include command language, searchable and displayable fields, and the basic techniques needed to use the CA File effectively. Hands-on practice is included.

### **Search Strategy in the CA File—**

... designed for the searcher who has experience in searching the CA File on CAS ONLINE and/or has attended an introductory CA File Workshop. The course will focus on search strategy, data base content, CAS's indexing policies, and the use of search aids. Knowledge of the command language is required.

### **The Registry File—Basic Level—**

... covers substance identification in the Registry File, providing access to over 6.5 million substances. You will learn to search by structure or substructure diagram, or by chemical names. Answers include structure diagrams, Registry Numbers, synonyms, CA Index Names, and molecular formulas, as well as the ten most recent CA citations for each Registry Number. Hands-on practice is included.

For further details, contact:—

Deborah Walker, The Royal Society of Chemistry, The University, Nottingham NG7 2RD. England.

Tel. (0602) 507411 Telex: 37488

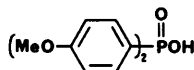
ROYAL  
SOCIETY OF  
CHEMISTRY



# Phosphorus Reagents

Aldrich offers a variety of phosphorus compounds for your synthetic needs. The following are just a few examples of these reagents and their recent applications. Send for a free computer printout of all the phosphorus reagents available from Aldrich.

## Bis(4-methoxyphenyl)phosphinic Acid

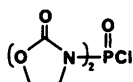


Reagent for the synthesis of diaryl phosphinic azides.

Harger, M.J.P.; Westlake, S. *Tetrahedron* 1982, 38, 1511.

27,460-7 5g \$14.90; 25g \$49.80

## Bis(2-oxo-3-oxazolidinyl)phosphinic Chloride

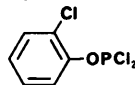


Carboxylate activator for the formation of  $\beta$ -lactams<sup>1</sup> and esters.<sup>2</sup> Mild reaction conditions. Potential application in nucleotide synthesis.<sup>3</sup>

(1) Shridhar, D.R. *et al. Synthesis* 1982, 63. (2) Palomo, C. *et al. Synth. Commun.* 1983, 13, 471. (3) Palomo, C. *et al. Synthesis* 1980, 547.

27,096-2 1g \$5.50; 5g \$18.35

## 2-Chlorophenyl Dichlorophosphite



Reagent for the synthesis of deoxy-nucleoside phosphoramidites.

Fourrey, J.-L.; Varenne, J. *Tetrahedron Lett.* 1983, 24, 1963.

27,148-9 10g \$12.00; 50g \$40.00

## Ethyl Dichlorophosphate

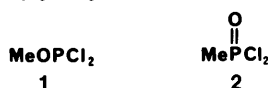


Phosphorylation of hydroxybenzophenone derivatives<sup>1</sup> and synthesis of pesticides<sup>2-3</sup>

(1) Chekmacheva, O.I. *et al. Zh. Obshch. Khim.* 1983, 53, 749. (2) Buerstinghaus, R. *et al. Ger. Offen. DE 3,236,431* (1984); *Chem. Abstr.* 1984, 101, 91224u. (3) Fahmy, M.A.H. *PCT Int. Appl. WO 83 00 870* (1983); *Chem. Abstr.* 1983, 99, 18112s.

E2,370-4 25g \$19.90; 100g \$56.45

## Methyl Dichlorophosphite (1) Methylphosphonic Dichloride (2)



Several applications in the synthesis of oligonucleotides.

Caruthers, M.H. *et al. Tetrahedron* 1984, 40, 95. Beaucage, S.L. *Tetrahedron Lett.* 1984, 25, 375. Sung, M.T. *et al. ibid.* 1983, 24, 1019. McBride, L.J.; Caruthers, M.H. *ibid.* 1983, 24, 245. Fourrey, J.-L.; Varenne, J. *ibid.* 1983, 24, 1963. Seela, F. *et al. J. Am. Chem. Soc.* 1983, 105, 5879.

23,522-9 (1) 10g \$23.25; 50g \$80.25  
22,805-2 (2) 5g \$19.00; 25g \$67.50

## Methyl Dichlorophosphate

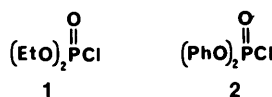


Sequential phosphorylation of alcohols.

Lacey, C.J.; Loew, L.M. *J. Org. Chem.* 1983, 48, 5214.

15,821-6 25g \$35.50; 100g \$98.75

## Diethyl Chlorophosphate (1) Diphenyl Chlorophosphate (2)

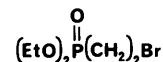


Both reagents have been used in the synthesis of enol phosphates<sup>1-4</sup> and  $\alpha$ -fluoro alcohols.<sup>5</sup> Also used for nucleoside synthesis,<sup>6,7</sup> other phosphorylations,<sup>8</sup> and as synthetic reagents.<sup>9</sup>

(1) Harris, F.L.; Weiler, L. *Tetrahedron Lett.* 1984, 25, 1333. (2) Okamoto, Y. *Chem. Lett.* 1984, 87. (3) Marshall, J.A.; Jenson, T.M. *J. Org. Chem.* 1984, 49, 1707. (4) Schroth, W. *et al. Synthesis* 1983, 827. (5) Ortiz de Montellano, P.-R. *et al. J. Org. Chem.* 1983, 48, 4661. (6) Hayakawa, Y.; Aso, Y. *Tetrahedron Lett.* 1983, 24, 5641. (7) Hollmann, J.; Schlimme, E. *Justus Liebig's Ann. Chem.* 1984, 98. (8) Just, G.; Dugat, D.; Liu, W.-Y. *Can. J. Chem.* 1983, 61, 1730. (9) Kunieda, T. *et al. Tetrahedron* 1983, 39, 3253.

D9,163-2 (1) 100g \$7.80; 500g \$19.50  
D20,655-5 (2) 25g \$10.75; 100g \$29.75

## Diethyl 2-Bromoethylphosphonate



Reagent used in the synthesis of  $\beta$ -phosphoryl sulfoxides<sup>1</sup> and of substrate analogs for enolase.<sup>2</sup>

(1) Mikolajczyk, M. *et al. Tetrahedron* 1983, 39, 1189. (2) Cleland, W.W. *et al. Biochemistry* 1984, 23, 2779.

D9,115-2 5g \$12.95; 25g \$57.35  
100g \$148.95

## Diphenylphosphinic Chloride

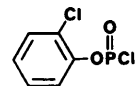


Used in solid-phase peptide synthesis.

Galpin, I.J.; Robinson, A.E. *Tetrahedron* 1984, 40, 627.

23,023-5 10g \$14.65; 50g \$48.40

## 2-Chlorophenyl Dichlorophosphate

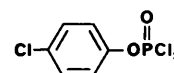


Used for phosphorylation in the phosphotriester approach to oligonucleotides.

Pfleiderer, W. *et al. Justus Liebig's Ann. Chem.* 1981, 2392. van Boom, J.H. *et al. Tetrahedron Lett.* 1981, 22, 3887. van Boom, J.H. *et al. Tetrahedron* 1981, 37, 3751.

23,523-7 5g \$12.90; 25g \$38.95

## 4-Chlorophenyl Dichlorophosphate



Precursor to phosphorylating reagents used in nucleoside synthesis.

(1) Takaku, H. *et al. Chem. Lett.* 1982, 197. (2) Michels, W.; Schlimme, W. *Justus Liebig's Ann. Chem.* 1982, 1398. (3) Takaku, H. *et al. J. Org. Chem.* 1982, 47, 4937. (4) Sung, W.L. *ibid.* 1982, 47, 3623.

23,524-5 5g \$13.55; 25g \$40.88



chemists helping chemists in research & industry

# aldrich chemical co.

© P.O. Box 355, Milwaukee, Wisconsin 53201 USA • (414) 273-3850