

A close-up photograph of several hands gently cupping a small green seedling with two leaves, which is growing out of a mound of dark brown soil.

We are at your disposal!

Carbon-14 and Carbon-13 Labelled PESTICIDES





WE ARE SPECIALIZED IN C-14 LABELLED PESTICIDES

ALL COMPOUNDS ARE AVAILABLE WITH C-13 LABELLING

NOTES

Our company has been engaged in preparing isotope labelled agrochemicals (pesticides, herbicides, fungicides, acaricides etc.) and other compounds for over fifty years.

The list comprises the most frequently sold ^{14}C -labelled pesticides. These compounds are the most widely used representatives of the various classes in this field but obviously, **inquiries for other pesticides, drugs, intermediates are also welcome.**

There are several common names of these compounds, which vary depending on the country where they are applied. We use the common names given by the British Standard Institution.

Regarding the structure of these compounds please visit our website: **www.izotop.hu**

Molar activities are usually set to the customer's request and often reach 1.85 GBq/mM (50 mCi/mM). Being these chemicals sensitive they are synthesized as custom preparation products; consequently each offer is individually submitted taking the quantity, requested molar activity, date of delivery, etc. into account.

Isotope labelled pesticides are delivered in dry ice and recommended to be stored at $-20\text{ }^{\circ}\text{C}$ or below; the cooler the better.

CUSTOM SYNTHESIS

We are pleased to undertake synthesis of other compounds not listed in our catalogues. We are prepared to give quotation following your request. When inquiring please indicate the following required specifications, too:

- **correct** chemical or common **name** of the compounds (in case of more complicated molecules together with the **structure**);
- required **position of labelling**;
- required **molar or specific activity**;
- required **total activity**;
- required **form** (net material or a solution – in the latter case the requested solvent and radiochemical concentration; requested packsize);
- whether you are able to supply **synthesis route** and/or **protocols**, references of technical literature, raw material or standard (final product and/or intermediates) analytical method (in general HPLC). All information provided by the customers are handled as confidential. NDA is concluded upon customer's request. Providing these results in significant reduce in price.

As a result of many years practice in this field experts of the company are at your disposal in answering technical questions (Synthesis Business) and issuing quotations (Commercial Department).



2,4-D, [carboxyl- ¹⁴ C]	CC-294
2,4-D, [ring-U- ¹⁴ C]	CC-292
2,4-DB, [ring-U- ¹⁴ C]	CC-367
2,4-D DIMETHYLAMMONIUM SALT, [ring-U- ¹⁴ C]	CC-715
ACEPHATE, [S-methyl- ¹⁴ C]	CC-368
ACETAMIPRID, [pyridyl-2,6- ¹⁴ C]	CC-701
ALACHLOR, [methoxy- ¹⁴ C]	CC-309
ALDICARB, [i-butyl- ¹⁴ C]	CC-326
AMETRYN, [ring-U- ¹⁴ C]	CC-270
AMICARBAZONE, [1,2,4-triazole 3- ¹⁴ C]	CC-477
ASULAM, [ring-U- ¹⁴ C]	CC-315
ATRAZINE, [ring-U- ¹⁴ C]	CC-298
AZOCYCLOTIN, [cyclohexyl-1- ¹⁴ C]	CC-402
AZOXYSTROBIN, [2-cyanophenyl ring-U- ¹⁴ C]	CC-570
BENFURACARB, [isopropyl-2- ¹⁴ C]	CC-370
BENFURACARB, [phenyl ring-U- ¹⁴ C]	CC-371
BENTAZONE, [carbonyl- ¹⁴ C]	CC-328
BENTAZONE, [ring U- ¹⁴ C]	CC-589
BENSULFURON-METHYL, [phenyl-U- ¹⁴ C]	CC-722
BENSULFURON-METHYL, [pyrimidine-2- ¹⁴ C]	CC-720
BENZYLADENINE, [8- ¹⁴ C]	CC-451
BENZYLADENINE, [phenyl-U- ¹⁴ C]	CC-450
BETA-CYPERMETHRIN, [benzyl ring-U- ¹⁴ C]	CC-445
BETA-CYPERMETHRIN, [benzyl-7- ¹⁴ C]	CC-329
BETA-CYPERMETHRIN, [cyano- ¹⁴ C]	CC-447
BETA-CYPERMETHRIN, [cyclopropane-1- ¹⁴ C]	CC-446
BETA-CYPERMETHRIN, [phenyl ring-U- ¹⁴ C]	CC-369
BIFENTHRIN, [benzyl ring-U- ¹⁴ C]	CC-350

BIFENTHRIN, [cyclopropane-1- ¹⁴ C]	CC-351
BROMOXYNIL OCTANOATE, [cyano- ¹⁴ C]	CC-625
BROMOXYNIL OCTANOATE, [ring-U- ¹⁴ C]	CC-333
BUPIRIMATE, [pyrimidine-2- ¹⁴ C]	CC-626
CADUSAFOS, [sec-butyl-1- ¹⁴ C]	CC-373
CAPTAN, [carboximide- ¹⁴ C]	CC-653
CARBARYL, [ring-1- ¹⁴ C]	CC-255
CARBENDAZIM, [imidazole-2- ¹⁴ C]	CC-305
CARBOFURAN, [(2,2-dimethyl,3)- ¹⁴ C]	CC-239
CARBOFURAN, [phenyl ring-U- ¹⁴ C]	CC-339
CHLORFENVINPHOS, [ethyl-1- ¹⁴ C]	CC-242
CHLORIDAZON, [phenyl-U- ¹⁴ C]	CC-654
CHLOROTOLURON, [ring-U- ¹⁴ C]	CC-558
CHLORPROPHAM, [ring-U- ¹⁴ C]	CC-482
CHLORPYRIFOS, [ethyl-1- ¹⁴ C]	CC-243
CHLORPYRIFOS, [pyridine 2,6- ¹⁴ C]	CC-498
CLODINAFOP-PROPARGYL, [phenyl ring-U- ¹⁴ C]	CC-421
CLODINAFOP-PROPARGYL, [pyridyl-2,6- ¹⁴ C]	CC-424
CLOFENTEZINE, [tetrazine-3- ¹⁴ C]	CC-690
CLOMAZONE, [phenyl ring-U- ¹⁴ C]	CC-618
COUMAPHOS, [coumarin-4- ¹⁴ C]	CC-253
CUMYLURON, [chlorophenyl ring-U- ¹⁴ C]	CC-746
CUMYLURON, [phenyl ring-U- ¹⁴ C]	CC-745
CYHEXATIN, [cyclohexyl-1- ¹⁴ C]	CC-308
CYMOXANYL, [acetyl-2- ¹⁴ C]	CC-444
CYMOXANYL, [cyano- ¹⁴ C]	CC-696
CYPERMETHRIN, [benzyl-7- ¹⁴ C]	CC-261
CYPERMETHRIN, [carboxyl- ¹⁴ C]	CC-266
CYPERMETHRIN, [cyano- ¹⁴ C]	CC-265
CYPERMETHRIN, [cyclopropane-1- ¹⁴ C]	CC-267
CYPERMETHRIN, [phenyl ring-U- ¹⁴ C]	CC-413
CYPRODINIL, [phenyl ring-U- ¹⁴ C]	CC-616
CYROMAZINE, [ring-U- ¹⁴ C]	CC-714
DDE, [ring-U- ¹⁴ C]	CC-257
DDT, [ring-U- ¹⁴ C]	CC-256
DELTAMETHRIN, [benzyl-7- ¹⁴ C]	CC-259



DELTAMETHRIN, [benzyl ring-U- ¹⁴ C]	CC-560
DELTAMETHRIN, [cyano- ¹⁴ C]	CC-262
DESMEDIPHAM, [phenyl ring-U- ¹⁴ C]	CC-619
DIAZINON, [pyrimidinyl-6- ¹⁴ C]	CC-318
DICAMBA, [carboxyl- ¹⁴ C]	CC-355
DICAMBA, [ring-U- ¹⁴ C]	CC-492
DICHLOBENIL, [cyano- ¹⁴ C]	CC-376
DICHLOBENIL, [ring-U- ¹⁴ C]	CC-377
DICHLORPROP, [ring-U- ¹⁴ C]	CC-354
DICHLORVOS, [methyl- ¹⁴ C]	CC-341
DICLOFOP ACID, [2,4-dichlorophenoxy ring-U- ¹⁴ C]	CC-541
DICLOFOP-METHYL, [1,4-dioxyphenyl ring-U- ¹⁴ C]	CC-621
DICLOFOP-METHYL, [2,4-dichlorophenoxy ring-U- ¹⁴ C]	CC-540
DICOFOL, [ring-U- ¹⁴ C]	CC-314
DIFENOCONAZOLE, [triazole-U- ¹⁴ C]	CC-456
DIFLOVIDAZIN, [tetrazine-3- ¹⁴ C]	CC-581
DIFLOVIDAZIN, [tetrazine-6- ¹⁴ C]	CC-582
DIMETHOATE, [carbonyl- ¹⁴ C]	CC-336
DIMETHOATE, [O-methyl- ¹⁴ C]	CC-306
DIMETHOMORPH, [4-chlorophenyl ring-U- ¹⁴ C]	CC-610
DIOXATHION, [ethyl-1- ¹⁴ C]	CC-244
DIQUAT DIBROMIDE MONOHYDRATE, [¹⁴ C]	CC-681
DITHIANON, [5- ¹⁴ C]	CC-753
DIURON, [carbonyl- ¹⁴ C]	CC-297
DIURON, [ring-U- ¹⁴ C]	CC-325
EPOXICONAZOLE, [epoxy-2- ¹⁴ C]	CC-487
EPTC, [carbonyl- ¹⁴ C]	CC-295
EPTC, [propyl-1- ¹⁴ C]	CC-453
ESPROCARB, [ring-U- ¹⁴ C]	CC-551
ETHIRIMOL, [pyrimidine-2- ¹⁴ C]	CC-680
ETHOFUMESATE, [benzene ring-U- ¹⁴ C]	CC-613
ETOFENPROX, [3-phenoxybenzyl-7- ¹⁴ C]	CC-496
ETOFENPROX, [propyl-2- ¹⁴ C]	CC-674
FENAMIPHOS, [phenyl ring-U- ¹⁴ C]	CC-647

FENARIMOL, [4-chlorophenyl ring-U- ¹⁴ C]	CC-408
FENARIMOL, [carbinol- ¹⁴ C]	CC-407
FENOBUCARB, [ring-U- ¹⁴ C]	CC-238
FENPROPIDIN, [propyl-3- ¹⁴ C]	CC-652
FERBAM, [carbamate- ¹⁴ C]	CC-467
FLORASULAM, [2- ¹⁴ C]	CC-635
FLORASULAM, [2',6'-difluorophenyl ring-U- ¹⁴ C]	CC-634
FLUAZINAM, [phenyl-U- ¹⁴ C]	CC-688
FLUAZINAM, [pyridyl-2,6- ¹⁴ C]	CC-648
FLUFENACET, [phenyl ring-U- ¹⁴ C]	CC-556
FLUOMETURON, [ring-U- ¹⁴ C]	CC-719
FLUROCHLORIDON, [phenyl ring-U- ¹⁴ C]	CC-615
FLUROXYPYR-MEPTYL, [acetyl-1- ¹⁴ C]	CC-645
FLUSULFAMIDE, [2'-chloro-4'-nitrophenyl ring-U- ¹⁴ C]	CC-378
FLUSULFAMIDE, [4-chloro-3-trifluoromethylphenyl ring-U- ¹⁴ C]	CC-379
FOLPET, [phenyl ring-U- ¹⁴ C]	CC-428
FORCHLORFENURON, [phenyl ring-U- ¹⁴ C]	CC-380
FORCHLORFENURON, [pyridine-2,6- ¹⁴ C]	CC-397
GLYPHOSATE, [glycine-2- ¹⁴ C]	CC-311
GLYPHOSATE, [P-methylene- ¹⁴ C]	CC-293
HEXACHLOROBENZENE, [U- ¹⁴ C]	CC-357
HEXAZINONE, [triazine-6- ¹⁴ C]	CC-307
HEXYTHIAZOX, [cyclohexyl-U- ¹⁴ C]	CC-452
HEXYTHIAZOX, [1,3-thiazolidine- ¹⁴ C]	CC-691
HEXYTHIAZOX, [phenyl-U- ¹⁴ C]	CC-729
IM-1-5, [pyridyl-2,6- ¹⁴ C]	CC-708
IMAZALIL, [phenyl-U- ¹⁴ C]	CC-702
IMIDACLOPRID, [imidazolidine ring-2- ¹⁴ C]	CC-327
IMIDACLOPRID, [pyridyl-2,6- ¹⁴ C]	CC-640
IMINOCTADINE TRIACETATE, [guanidine- ¹⁴ C]	CC-404
IMINOCTADINE TRIACETATE, [octyl-1,8- ¹⁴ C]	CC-405
IODOCARB, [butyl-1- ¹⁴ C]	CC-643
IODOCARB, [carbamate- ¹⁴ C]	CC-489
IODOCARB, [butyl-1- ¹⁴ C, carbamate- ¹⁴ C]	CC-734



IODOSULFURON-METHYL SODIUM, [phenyl-U- ¹⁴ C]	CC-717
IODOSULFURON-METHYL SODIUM, [triazine-U- ¹⁴ C]	CC-716
IPIRONE, [phenyl-U- ¹⁴ C]	CC-697
ISOPROTURON, [ring-U- ¹⁴ C]	CC-337
ISOXATHION, [isoxazole-5- ¹⁴ C]	CC-614
LACTOFEN, [2-nitrophenyl ring-U- ¹⁴ C]	CC-395
LAMBDA-CYHALOTHRIN, [cyano- ¹⁴ C]	CC-703
LAMBDA-CYHALOTHRIN, [phenoxy-U- ¹⁴ C]	CC-707
LENACIL, [pyrimidine-4,6- ¹⁴ C]	CC-381
LINDANE, [ring-U- ¹⁴ C]	CC-330
LINURON, [carbonyl- ¹⁴ C]	CC-296
LINURON, [ring-U- ¹⁴ C]	CC-310
MALATHION, [succinyl-2,3- ¹⁴ C]	CC-246
MANCOZEB, [ethylene-1,2- ¹⁴ C]	CC-304
MANEB, [ethylene-1,2- ¹⁴ C]	CC-276
MCPA, [carboxyl- ¹⁴ C]	CC-414
MCPA, [ring-U- ¹⁴ C]	CC-382
MCPA-2-ETHYLHEXYL ESTER, [ring-U- ¹⁴ C]	CC-724
MECOPROP, [ring-U- ¹⁴ C]	CC-401
MEFENACET, [aniline ring-U- ¹⁴ C]	CC-383
MESOSULFURON-METHYL, [pyrimidine-2- ¹⁴ C]	CC-728
MESOTRIONE, [1,3-cyclohexanedione-2- ¹⁴ C]	CC-638
MESOTRIONE, [1,3-cyclohexanedione-1(3)- ¹⁴ C]	CC-675
MESOTRIONE, [phenyl-U- ¹⁴ C]	CC-700
METALAXYL ACID, [ring-U- ¹⁴ C]	CC-534
METALAXYL, [ring-U- ¹⁴ C]	CC-400
METALAXYL-M, [ring-U- ¹⁴ C]	CC-672
METAMIFOP, [2-fluor-phenyl ring-U- ¹⁴ C]	CC-545
METAMIFOP, [6-chloro-2-benzoxazolyl benzene ring-U- ¹⁴ C]	CC-546
METAMITRON, [phenyl ring-U- ¹⁴ C]	CC-409
METAZACHLOR, [phenyl-U- ¹⁴ C]	CC-571
METCONAZOLE, [1,2,4-triazole-U- ¹⁴ C]	CC-721
METHABENZTHIAZURON, [benzene ring-U- ¹⁴ C]	CC-466
METHAMIDOPHOS, [S-methyl- ¹⁴ C]	CC-254

METHOLACHLOR, [ring-U- ¹⁴ C]	CC-726
METHOLACHLOR ESA, [ring-U- ¹⁴ C]	CC-622
METHOMYL, [carbonyl- ¹⁴ C]	CC-287
METHOPRENE, [5- ¹⁴ C]	CC-420
METRIBUZIN, [ring-6- ¹⁴ C]	CC-320
METSULFURON-METHYL, [triazinyl-2- ¹⁴ C]	CC-360
MONOCROTOPHOS, [O-methyl- ¹⁴ C]	CC-250
MSMA, [¹⁴ C]	CC-271
NAPROPAMIDE, [1-naphthyloxy-1- ¹⁴ C]	CC-685
NICOSULFURON, [pyrimidine-2- ¹⁴ C]	CC-692
OXAMYL, [carbamoyl- ¹⁴ C]	CC-331
OXASULFURON, [phenyl ring-U- ¹⁴ C]	CC-650
OXASULFURON, [pyrimidine 2- ¹⁴ C]	CC-651
PARAOXON, [ethyl-1- ¹⁴ C, ring-U- ¹⁴ C]	CC-385
PARATHION, [ring-U- ¹⁴ C]	CC-247
PARATHION, [ethyl-1- ¹⁴ C, ring-U- ¹⁴ C]	CC-396
PARATHION-METHYL, [ring-U- ¹⁴ C]	CC-353
PENTACHLOROPHENOL [U- ¹⁴ C]	CC-274
PERMETHRIN, [phenoxy ring-U- ¹⁴ C]	CC-386
PHENMEDIPHAM, [3-methyl-phenyl ring-U- ¹⁴ C]	CC-620
PHENTHOATE, [ring-U- ¹⁴ C]	CC-576
PHOSMET, [phthalimide-1,3- ¹⁴ C]	CC-729
PIRIMIPHOS-METHYL, [pyrimidinyl-2- ¹⁴ C]	CC-248
PROCHLORAZ, [phenyl ring-U- ¹⁴ C]	CC-269
PROCHLORAZ ZINC COMPLEX, [phenyl ring-U- ¹⁴ C]	CC-639
PROPANIL, [ring-U- ¹⁴ C]	CC-575
PROPICONAZOLE, [dioxolane-4- ¹⁴ C]	CC-323
PROPICONAZOLE, [phenyl-U- ¹⁴ C]	CC-268
PROPICONAZOLE, [triazole ring-U- ¹⁴ C]	CC-387
PROPIISOCHLOR, [2-chloroacetyl-1- ¹⁴ C]	CC-417
PROPIISOCHLOR, [ring-U- ¹⁴ C]	CC-416
PROPYZAMIDE, [carboxyl- ¹⁴ C]	CC-486
PROSULFOCARB SULFOXIDE, [ring-U- ¹⁴ C]	CC-443
PROSULFOCARB, [ring-U- ¹⁴ C]	CC-356
PROTHIOCONAZOLE, [phenyl-U- ¹⁴ C]	CC-709



PROTHIOCONAZOLE-DESTHIO, [1,2,4-triazole-U- ¹⁴ C]	CC-711
PYRIBUTICARB, [phenyl-U- ¹⁴ C]	CC-363
PYRIBUTICARB, [pyridyl-2,6- ¹⁴ C ₂]	CC-362
PYRIDAPHENTHION, [pyridaziny-4,5- ¹⁴ C]	CC-389
PRIMETHANIL, [pyrimidine-2- ¹⁴ C]	CC-689
QUINMERAC, [benzene ring-U- ¹⁴ C]	CC-655
SDDC, [carbamate- ¹⁴ C]	CC-442
SDEDC, [carbamate- ¹⁴ C]	CC-536
SIMAZINE, [ring-U- ¹⁴ C]	CC-249
SULCOTRIONE, [1,3-cyclohexanedione-2- ¹⁴ C]	CC-557
SULCOTRIONE, [1,3-cyclohexanedione-1(3)- ¹⁴ C]	CC-623
TAU-FLUVALINATE, [phenoxy ring-U- ¹⁴ C]	CC-649
TEBUCONAZOLE, [phenyl ring-U- ¹⁴ C]	CC-390
TEBUCONAZOLE, [triazole ring-U- ¹⁴ C]	CC-459
TEBUTHIURON, [ring-5- ¹⁴ C]	CC-272
TEFLUTHRIN, [benzyl-7- ¹⁴ C]	CC-713
TERBUFOS, [O-ethyl-1- ¹⁴ C]	CC-321
TERBUTHYLAZINE, [ring-U- ¹⁴ C]	CC-437
TERBUTRYN, [ring-U- ¹⁴ C]	CC-448
TETRADIFON, [4-chlorophenyl-U- ¹⁴ C]	CC-661
THIOPHANATE-METHYL, [ring-U- ¹⁴ C]	CC-572
THIRAM, [carbamate- ¹⁴ C]	CC-441
TRI-ALLATE, [allyl-1- ¹⁴ C]	CC-364
TRIBENURON-METHYL, [phenyl ring-U- ¹⁴ C]	CC-484
TRIBENURON-METHYL, [triazine ring-U- ¹⁴ C]	CC-485
VINCLOZOLIN, [phenyl ring-U- ¹⁴ C]	CC-394
ZINEB, [ethylene-1,2- ¹⁴ C]	CC-277
ZIRAM, [carbamate- ¹⁴ C]	CC-324
ZIRAM, [methyl- ¹⁴ C]	CC-352



ALL COMPOUNDS IN THE LIST ARE AVAILABLE

WITH STABLE ¹³C LABELLING, AS WELL





Founded in 1959, the Institute of Isotopes of the Hungarian Academy of Sciences began to produce radioactive isotopes in 1964. It then became a major Hungarian centre for the research, development and production of radioisotopes. With effect from 1993 a part of the former Institute has been operating as the Institute of Isotopes Co. Ltd.

The company is divided into four business units:

- Radiopharmaceutical
- Immunoassay
- Synthesis
- Radiation Techniques



The main activities of the company cover the following fields:

- Organic compounds labelled with C-14, H-3 radioisotopes and C-13 stable isotope
- Custom radiosynthesis
- Radiochemical repurification service for C-14 and H-3 labelled compounds
- Radiochemicals
- Radiopharmaceuticals for diagnostic and therapeutical use
- Cold kits for Tc labelling
- Immunoassay kits available in a number of formats: RIA/IRMA, EIA/ELISA
Kits for diagnostic purposes: thyroid assays, endocrinological assays, tumor markers,
Kits for research purposes
- Ir-192 and Co-60 sealed industrial sources
- Irradiators, hot cells, hot-cell lines, clean rooms
- Services in the field of radiation techniques

IZOTOP is certified according to ISO-9001, ISO-14001, ISO-13485



IZOTOP distributes its products and services both to domestic and to export markets.

Carbon-13 and Carbon-14 labelling

During decades of activity in this field, some hundreds of organic compounds labelled with ^{14}C radioisotope have been developed for pharmacological or metabolism studies of **drugs, pesticides, bioactive compounds**, etc.

Many substances have also been used as intermediates for chemical syntheses, some of them produced on a large scale as well.

Custom synthesis of labelled compounds includes either the large-scale or the small-scale radiochemical total synthesis of the material with the required activity, specific activity, a complete documentation upon request. A detailed quality certificate is issued for each product.





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