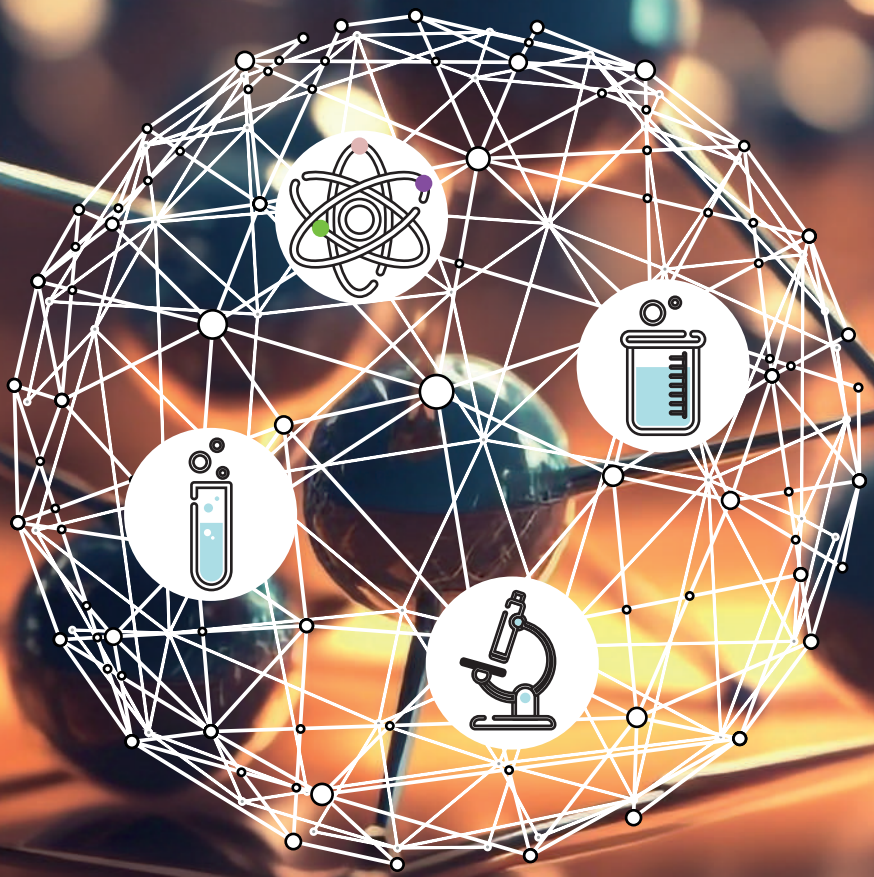
인증표준물질

Certified Reference Materials



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중금속분석을 위한 시료전처리장비와 인증표준물질등 소모품 전문기업!

(주) 오디랩은 2008년 8월에 설립된 회사로 중금속분석에 사용되는 흑연블럭 산 분해장비인 **에코프리 I , II , III 시리즈와 산 세척장치, 고순도 산 제조 장치,유리분주기, ICP/ICP MS 소모품, 인증표준물질(CRM), 숙련도 평가물질 (PT)등** 을 제조, 수입판매하고 있습니다.
(주) 오디랩에서 제조 판매하는 흑연블럭 산 분해장비는 열선 가열판이나 마이크로웨이브의 단점을 보완한 제품으로 **국내를 비롯하여 세계 7개국에 특허를 획득하였고 현재 해외로도 수출 중** 에 있습니다.
또한 실험실에서 분석 데이터의 신뢰성확보를 위한 **인증표준물질(CRM)과 표준물질(RM), 국제숙련도 물질을 전세계에서 수입하여 판매**하고 있습니다.
인증표준물질은 고객이 찾으시는 제품을 탐색하여 드리고 있으며, 가장 근접한 제품으로 추천드리고 있습니다.
특히 유럽환경규제인 RoHS에 대응한 IEC62321시험법에 나오는 인증표준물질을 국내 시험평가기관이나 국가기관에 공급하고 있으며, 환경부에서 실시하는 정도관리에 대응하여 LGC사에서 제공하는 환경관련 숙련도 물질을 공급하고 있습니다.

저희 (주) 오디랩은 화학실험실의 동반자로서
분석의 재현성과 정확성, 신뢰성 확보를 위해
언제나 고객의 노력과 함께 하겠습니다

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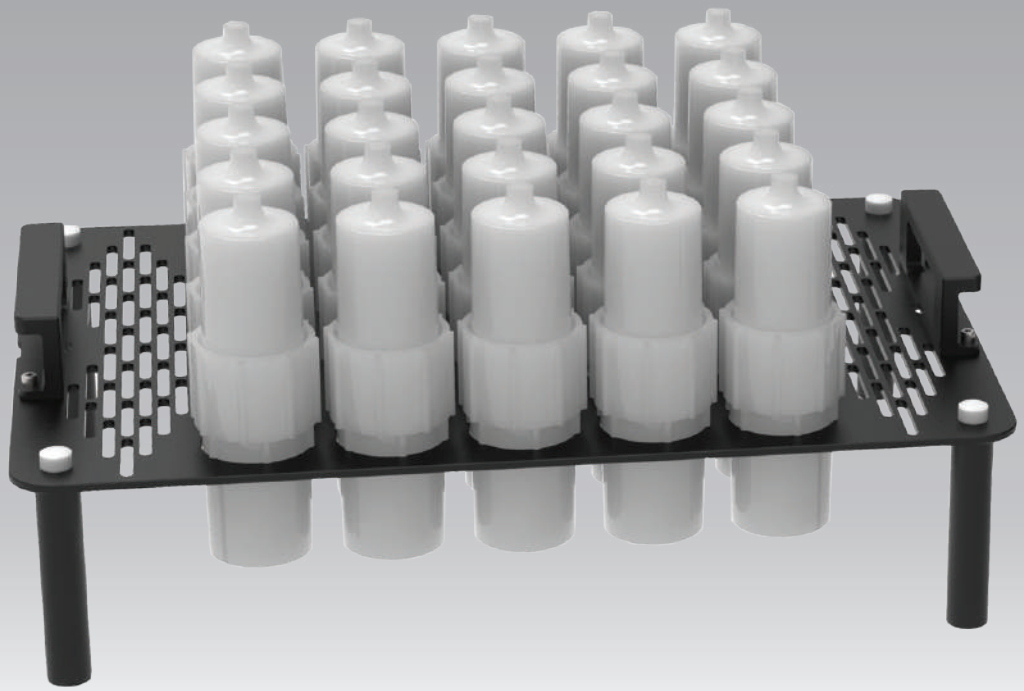
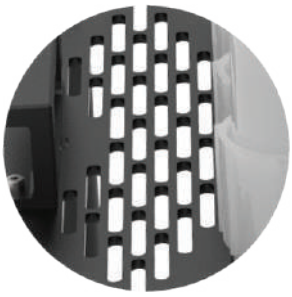
자동 산분해장비

ADS25

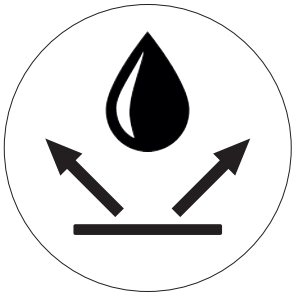
견적문의





경량화 & 벤틸레이션

산순환 포집분해용기



오염방지&내구성

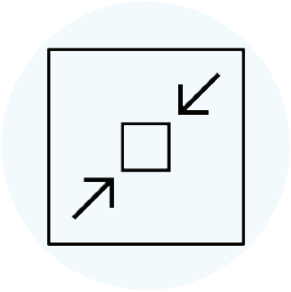
앱 연동 조작

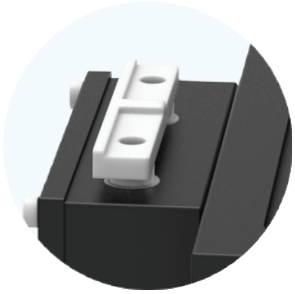
경량화 & 벤틸레이션 - 이동 및 보관을 위해 플레이트를 타공디자인으로 경량화를 하였습니다
또한 타공을 통하여 월활하게 열기의 순환이 이루어 집니다.

산순환 포집분해용기 - 좌우에 있는 리프트 장치로 산 순환 포집분해 용기 내부의 산을 가열 / 냉각 시켜서
사이펀 현상에 의해 리사이클 시켜 시료를 분해할 수 있도록 디자인 하였습니다.

오염방지&내구성 - SUS 재질사용 및 테프론 특수코팅을 하여 표면이 쉽게 오염되지 않도록 제작하였습니다.
또한 상부 가열부와 하부 전자제어부는 서로 격리,밀봉되어 열 또는 산 증기로 인하여
전자제어장치가 손상되지않도록 되어있습니다.

앱 연동 조작 - 20 Step 으로 가열 / 냉각 으로 분해조건을 프로그램화 할 수 있으며, 앱을 사용하여 조절가능합니다.





컴팩트한 사이즈 | **오토메틱 리프팅** | **균일한 온도** | **수동 승강버튼**

컴팩트한 사이즈 - 실험실 흄후드 내부에서 사용할 때 가장 적절한 사이즈로 설치 및 이동이 용이하고
전원스위치는 콘센트라인에 위치하고 있어서 산에대한 노출이 없고 내구성이 높습니다.

오토메틱 리프팅 - 메뉴얼 및 프로그래밍 기능으로 반복적인 가열 / 냉각을 할 수있도록 리프팅 기능이 있습니다.

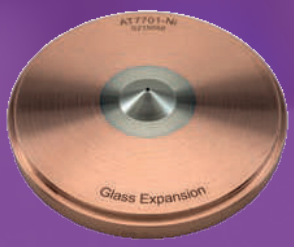
균일한 온도 - 흑연 소재를 사용하여 균일한 온도를 제공하고 (±1℃ 온도편차를 갖는다)
제어는 0.2 ℃ 로 제어된다.

수동 승강버튼 - 리프트 장치를 수동버튼을 사용하여 상부 랙(Rack)을 상하로 움직여
사용자가 원할 시 용기의 상태를 언제든지 확인 할 수 있습니다.

GLASS EXPANSION
Quality By Design

ICP-OES / ICP-MS

모든 메이커 (애질런트, 써모, 퍼킨..etc) 전제품



견적문의

Petrochemical Std

본 자료는 시기에 따라 제품 단종 및 수치의 변경이
있을 수 있으니 본사로 문의 부탁드립니다.

Petrochemical std

Code	Product	Unit

ERM-EF213 PETROL 0.1 g

This material is a petroleum product containing sulfur (S) in its natural forms, closely matching commercial petrol fuels.
The absence of artificially added sulfur species avoids any effects arising from species specific analytical methods.

Certified Value

	Certified value [mg/kg]
Sulfur	9.1

BCR-420 WASTE MINERAL OIL (low PCB level) 7.5 g

The sample consists of approximately 7.5 g of waste mineral oil in brown glass ampoules sealed under argon.

Certified Value

Congener number / IUPAC name	Certified value [mg/kg]
28 / 2,4,4′-Trichlorobiphenyl	0.61
101 / 2,2′,4,5,5′-Pentachlorobiphenyl	1.45
118 / 2,3′,4,4′,5-Pentachlorobiphenyl	1.69
153 / 2,2′,4,4′,5,5′-Hexachlorobiphenyl	0.92
180 / 2,2′,3,4,4′,5,5′-Heptachlorobiphenyl	0.195

BCR-449 WASTE MINERAL OIL (high PCB level) 50 g

The sample consists of approximately 50 g of waste mineral oil in brown glass ampoules sealed under argon.

Certified Value

Congener number / IUPAC name	Certified value [mg/kg]
28 / 2,4,4′-Trichlorobiphenyl	0.80
52 / 2,2′,5,5′-Tetrachlorobiphenyl	31.4
101 / 2,2′,4,5,5′-Pentachlorobiphenyl	57.2
105 / 2,3,3′,4,4′-Pentachlorobiphenyl	17.4
118 / 2,3′,4,4′,5-Pentachlorobiphenyl	46.6
128 / 2,2′,3,3′,4,4′-Hexachlorobiphenyl	12.5
153 / 2,2′,4,4′,5,5′-Hexachlorobiphenyl	39.0
156 / 2,3,3′,4,4′,5-Hexachlorobiphenyl	6.9
170 / 2,2′3,3′,4,4′,5-Heptachlorobiphenyl	6.6
180 / 2,2′,3,4,4′,5,5′-Heptachlorobiphenyl	10.4

BCR-449 WASTE MINERAL OIL (high PCB level) 1 g

The reference material consists of three sealed NMR tubes containing H, M and L ethanol, respectively, to which tetramethylurea (TMU) as internal standard and C6F6 (NMR lock substance) were added.

The reference material is supplied as:
BCR-123A: 10 mm O.D. NMR tubes
BCR-123B: 15 mm O.D. NMR tubes.

Code	Product	Unit

Certified Value

	Parameter	Certified value [g/g]
Ethanol H	(D/H)I	109.65 x 10^{-6}
	(D/H)II	119.76 x 10^{-6}
	R	2.184
Ethanol M	(D/H)I	101.69 x 10^{-6}
	(D/H)II	130.94 x 10^{-6}
	R	2.575
Ethanol L	(D/H)I	90.30 x 10^{-6}
	(D/H)II	122.20 x 10^{-6}
	R	2.708

BCR-656 ABSOLUTE ALCOHOL (carbon-13 and deuterium isotopic ratio) 20 mL

The sample consists of approximately 20 mL neutral ethanol from wine.

Certified Value

Parameter	Certified value [g/g]
Site specific deuterium isotope ratio (D/H)I	102.84 x 10^{-6}
Site specific deuterium isotope ratio (D/H)II	132.07 x 10^{-6}
Relative deuterium isotope ratio R	2.570
$\delta^{13}C_{VPDB}$ measured by IRMS	-26.91 ‰

ERM-FC395k GAS OIL (CFPP and CP) 27 mL

It is a mixture of straight-run and cracked distillates, which were both severely hydro-treated. It does not contain fatty acid methyl esters.
Each unit of reference material consists of a set of two amber glass ampoules, each containing 27 mL of gas oil.

Certified Value	Certified value [°C]
Cold filter plugging point (CFPP)	-7.9
Cloud point (CP)	-7.2

ERM-EF002 BIODIESEL (B100 RAPESEED) (CFPP and CP) 54 mL

The material is available in a brown glass bottle, containing 10 mg.
The material corresponds to a 10 mg fraction of the original BCR-93 (100 mg units) repackaged under clean and inert gas conditions.

Certified Value	Certified value [°C]
Cold filter plugging point (CFPP)	-15.2
Cloud point (CP)	-4.5

Petrochemical std

Code	Product	Unit

ERM-EF004 DIESEL (B7) 54 mL

ERM-EF004 is prepared from a typical commercial automotive diesel fuel containing a volume fraction of approximately 7 % biodiesel that is based on rapeseed oil fatty acid methyl ester with the addition of 1 g/kg antioxidant (butylhydroxytoluene), so-called 'diesel (B7)'.

Certified Value	Certified value [°C]
Cold filter plugging point (CFPP)	-27.9
Cloud point (CP)	-6.8

ERM-EF411 HARD COAL (GCV, ash, elements) 50 mL

The material consists of a ground hard coal (top particle size about 1 mm).
It is packed in an aluminium-laminated sachet and is provided in units of 50 g.

Certified Value	Indicative value [mg/kg]	Certified Value	Indicative value [mg/kg]
Co	3.5	Tl	0.24
Hg	0.079	V	22
Sb	1.5	Zn	13

ERM-EF412 BROWN COAL (GCV, ash, volatile matter, elements) 50 mL

The material consists of a brown coal powder.
It is packed in an aluminium-laminated sachet and is provided in units of 50 g.

Certified Value

	Certified value [MJ/kg]
Gross calorific value (GCV)	26.02
Net calorific value (NCV)	24.98

	Certified value [MJ/kg]		Certified value [MJ/kg]
Volatile matter	50.1	Na	2.20
Ash	4.11	K	229
C	66.2	hg	0.070
H	4.88	Mn	48.6
N	0.74	Se	0.96
S	0.360	V	0.57
Ca	9.8		

ERM-EF413 FURNACE COKE (GCV,elements) 50 g

The material consists of a coarse furnace coke powder.
It is packed in an aluminium-laminated sachet and is provided in units of 50 g.

Certified Value

	Certified value [MJ/kg]
Gross calorific value (GCV)	29.5
Net calorific value (NCV)	29.4

Code	Product	Unit

	Certified value [MJ/kg]		Certified value [MJ/kg]
C	87.8	Ca	2.92
N	1.10	Na	0.64
S	0.58	Se	1.33
		Zn	16.0

IRMM-442 ISOOCTANE (purity) 100 mL

IRMM-442 consists of high purity isooctane supplied by Phillips Chemical Co. (USA) ampouled in 100 mL units under the direction of NBS (USA).
IRMM-442 is identical to NIST SRM 1816a, (certified in 1985 by the National Bureau of Standards NBS) presenty National Institute of Standards and Technology (NIST), in collaboration with Laboratoire National d'Essais (LNE) and the Institut Français du Pétrole (IFP).

	Certified value [g/kg]		Certified value [g/kg]
Isooctane	999.85	n-Heptane	0.02
Total organics (except n-Heptane)	0.11	Water	0.04

ERM-EF003 DIESEL (B7) 27 mL

ERM-EF003 is prepared from a typical commercial automotive diesel fuel containing a volume fraction of approximately 7 % biodiesel that is based on rapeseed oil fatty acid methyl ester with the addition of 1 g/kg antioxidant (butylhydroxytoluene), so-called 'diesel (B7)'.

	Certified value
Fatty acid methyl ester content	6.88 % (V/V)
Mono-aromatic hydrocarbon content	18.8 % (m/m)
Di-aromatic hydrocarbon content	1.84 % (m/m)
Polycyclic aromatic hydrocarbon content)	2.01 % (m/m)
Total aromatic hydrocarbon content	20.8 % (m/m)
Density (at 15.0 °C)	837.23 kg/m3
Kinematic viscosity (at 40.0 °C)	2.892 mm^2/s
Lubricity	220 µm

NIST-2297 Reformulated Gasoline (Nominal Mass Fraction 10 % Ethanol) 2 x 20 mL

It is intended primarily for use in the calibration of instruments and the evaluation of methods used for the determination of total sulfur, benzene, toluene, and ethanol in reformulated gasoline or similar matrix.

Certified Value

Constituent	CAS Registry Number	Mass Fraction (g/g)
Total sulfur		303.7×10^{-6}
Benzene	71-43-2	1.04×10^{-2}
Toluene	108-88-3	8.27×10^{-2}
Ethanol	64-17-5	9.91×10^{-2}

Petrochemical std

Code	Product	Unit
NIST-3080	Aroclor 1260 in Transformer Oil	5x1.2 mL

It is a solution of Aroclor 1260 (Chemical Abstracts Registry Number 11096-82-5) in transformer oil.

Certified Value	Mass Fraction
Aroclor 1260	1079 mg/kg ± 98 mg/kg

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