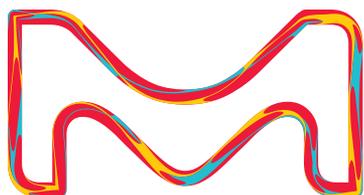


QUALITY AND SAFETY. SEALED.

**Sure/Seal™ system for
anhydrous solvents**



The life science
business of Merck
KGaA, Darmstadt,
Germany operates as
MilliporeSigma in the
U.S. and Canada.

Sigma-Aldrich®
Lab & Production Materials

Choose from the largest range of high-quality anhydrous solvents with exceptionally low water levels. Rest assured that each product is perfectly protected with our innovative, moisture-inhibiting Sure/Seal™ system. We use three different types of materials to ensure complete compatibility with contents, and easier handling for you. Sure/Seal™ bottles come in several sizes, ranging from 100 mL to 2 L.



Sure/Seal™ crimp

Innovative plug style

- Maximum surface area contact (liner to bottle) to exclude moisture and oxygen
- More than 50% thicker than competing brands to ensure low water content for entire shelf life

Outstanding elastomer and crimp cap design

- Air-tight system to protect product quality
- Excellent resealing properties
- Secondary resin layer ensures resistance to chemicals
- Outperforms competitors' seals in moisture prevention
- Three unique plug-style liners to suit a wide range of solvents and solutions

Highest quality anhydrous solvents

- Always maintains exceptionally low water content
- More than 90 products in different categories, including common air and/or moisture-sensitive, volatiles, and strong odors
- Various size offerings, from 100 mL to 2 L (Larger size of one-way container also available in North America)



Sure/Seal™ Plug

Three unique plug-style liners created for optimal compatibility with various solvents

White liner for Hexane, Toluene, Dichloromethane

Gray liner for 1,4-Dioxane, Methanol, Acetonitrile

Black liner for Tetrahydrofuran, *tert*-Butylamine, *a,a,a*-Trifluorotoluene

Examples of Sure/Seal™ liners before and after 4 punctures using an 18-gauge non-coring needle



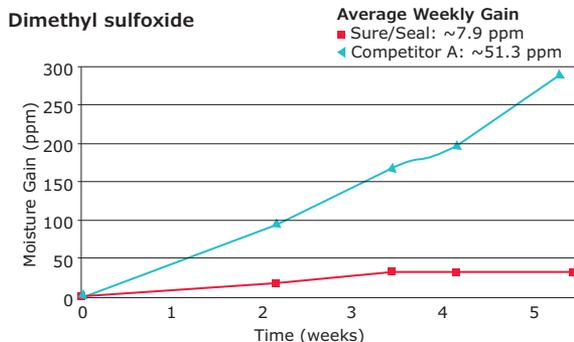
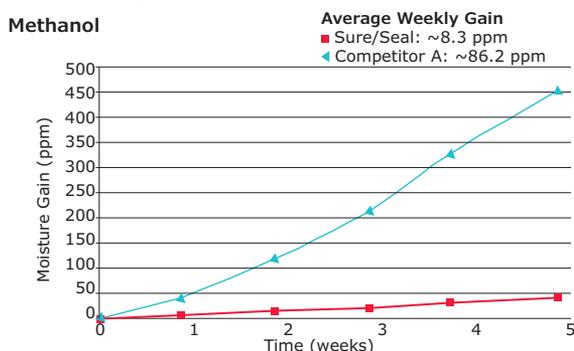
Learn more about the benefits of Sure/Seal™ system on: SigmaAldrich.com/sureseal

BEST OF THE TESTS

See how Sure/Seal™ system outperformed the competition

Moisture uptake

A comparative study was conducted to determine the effectiveness of the liners' seal and closure designs. Using a dried 18-gauge needle, triplicate sample sets from 100 mL bottles received four new punctures per liner per week during the five-week test period for a total of 20 punctures per liner. Karl Fischer (KF) titration was performed to measure the rate of moisture uptake.

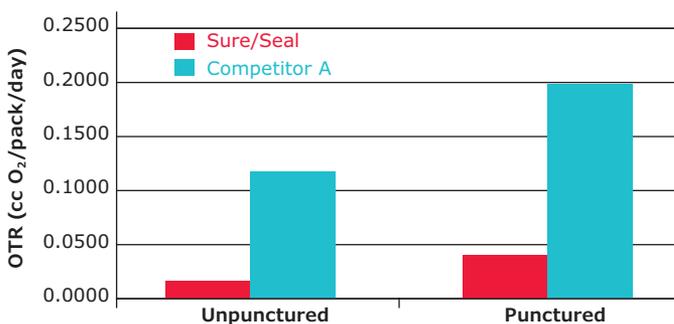


Summary:

Comprehensive testing confirmed that Sure/Seal™ system outperforms competitors' seals by maintaining low water absorption even after multiple punctures. See additional test results on [SigmaAldrich.com/sureseal](https://www.sigmaldrich.com/sureseal)

Oxygen transmission rate

Oxygen transmission rate (OTR) is a measurement of the amount of O₂ allowed to permeate into the bottle over a certain period, and demonstrates the cap and liner's ability to maintain an airtight seal over time.



Summary:

OTR evaluation of Sure/Seal™ system versus Competitor A demonstrated that the Sure/Seal™ system allows significantly lower oxygen uptake.

Safety bulletin

It is essential to follow proper care and dispensing procedures when handling air-sensitive products. To assist you in this, please consult "Technical Bulletin AL-134: Handling Air-Sensitive Reagents" on [SigmaAldrich.com/technicalbulletins](https://www.sigmaldrich.com/technicalbulletins)

Cat. No.	Product name	Water Content
271004	Acetonitrile, anhydrous, 99.8%	<0.001%
296295	Anisole, anhydrous, 99.7%	<0.002%
401765	Benzene, anhydrous, 99.8%	<0.001%
294098	Benzonitrile, anhydrous, ≥99%	<0.003%
305197	Benzyl alcohol, anhydrous, 99.8%	<0.003%
309443	(±)-1,3-Butanediol, anhydrous, ≥99%	<0.003%
281549	1-Butanol, anhydrous, 99.8%	<0.005%
294810	2-Butanol, anhydrous, 99.5%	<0.005%
471712	tert-Butanol, anhydrous, ≥99.5%	<0.005%
287725	Butyl acetate, anhydrous, ≥99%	<0.005%
306975	tert-Butyl methyl ether, anhydrous, 99.8%	<0.003%
335266	Carbon disulfide, anhydrous, ≥99%	<0.005%
289116	Carbon tetrachloride, anhydrous, ≥99.5%	<0.002%
284513	Chlorobenzene, anhydrous, 99.8%	<0.005%
414255	1-Chlorobutane, anhydrous, 99.5%	<0.002%
288306	Chloroform, anhydrous, ≥99%, contains 0.5-1.0% ethanol as stabilizer	<0.001%
372978	Chloroform, anhydrous, contains amylenes as stabilizer, ≥99%	<0.001%
227048	Cyclohexane, anhydrous, 99.5%	<0.001%
675970	Cyclopentyl methyl ether, contains 50 ppm BHT as inhibitor, anhydrous, ≥99.9%	≤0.005%
791962	Cyclopentyl methyl ether, inhibitor-free, anhydrous, ≥99.9%	≤0.005%
294772	Decahydronaphthalene, mixture of cis + trans, anhydrous, ≥99%	<0.002%
457116	Decane, anhydrous, ≥99%	<0.005%
271454	Dibutyl ether, anhydrous, 99.3%	<0.003%
240664	1,2-Dichlorobenzene, anhydrous, 99%	<0.003%
284505	1,2-Dichloroethane, anhydrous, 99.8%	<0.003%
270997	Dichloromethane, anhydrous, ≥99.8%, contains 40-150 ppm amylene as stabilizer	≤0.001%
281662	Diethylene glycol dimethyl ether, anhydrous, 99.5%	<0.005%
296082	Diethyl ether, contains 1 ppm BHT as inhibitor, anhydrous, ≥99.7%	<0.003%
296856	Diisopropyl ether, anhydrous, 99%, contains either BHT or hydroquinone as stabilizer	<0.002%
259527	1,2-Dimethoxyethane, anhydrous, 99.5%, inhibitor-free	<0.003%
271012	N,N-Dimethylacetamide, anhydrous, 99.8%	<0.005%
517127	Dimethyl carbonate, anhydrous, ≥99%	<0.002%
227056	N,N-Dimethylformamide, anhydrous, 99.8%	<0.005%
274380	Dimethyl sulfide, anhydrous, ≥99.0%	<0.003%
276855	Dimethyl sulfoxide, anhydrous, ≥99.9%	<0.005%
296309	1,4-Dioxane, anhydrous, 99.8%	<0.003%
271020	1,3-Dioxolane, anhydrous, contains ~75 ppm BHT as inhibitor, 99.8%	<0.003%
297879	Dodecane, anhydrous, ≥99%	<0.003%
270989	Ethyl acetate, anhydrous, 99.8%	<0.005%
459836	Ethyl alcohol, Pure, 200 proof, anhydrous, ≥99.5%	<0.005%
296848	Ethylbenzene, anhydrous, 99.8%	<0.002%

Cat. No.	Product name	Water Content
324558	Ethylene glycol, anhydrous, 99.8%	<0.003%
246654	Heptane, anhydrous, 99%	<0.001%
296317	Hexadecane, anhydrous, ≥99%	<0.003%
296090	Hexane, anhydrous, 95%	<0.001%
227064	Hexane, mixture of isomers, anhydrous, ≥99%	<0.001%
471402	1-Hexanol, anhydrous, ≥99%	<0.005%
306967	Isopentyl acetate, anhydrous, ≥99%	<0.005%
322415	Methanol, anhydrous, 99.8%	<0.002%
284467	2-Methoxyethanol, anhydrous, 99.8%	<0.005%
296996	Methyl acetate, anhydrous, 99.5%	<0.003%
277258	2-Methylbutane, anhydrous, ≥99%	<0.001%
721123	2-Methyl-2-butanol, anhydrous, ≥99%	≤0.003%
309435	3-Methyl-1-butanol, anhydrous, ≥99%	<0.003%
300306	Methylcyclohexane, anhydrous, ≥99%	<0.002%
291056	Methyl formate, anhydrous, 99%	<0.005%
294829	2-Methyl-1-propanol, anhydrous, 99.5%	<0.003%
328634	1-Methyl-2-pyrrolidinone, anhydrous, 99.5%	<0.005%
673277	2-Methyltetrahydrofuran, anhydrous, ≥99%, Inhibitor-free	≤0.002%
414247	2-Methyltetrahydrofuran, anhydrous, ≥99.0%, contains 250 ppm BHT as stabilizer	<0.002%
296821	Nonane, anhydrous, ≥99%	<0.005%
296988	Octane, anhydrous, ≥99%	<0.002%
297887	1-Octanol, anhydrous, ≥99%	<0.003%
236705	Pentane, anhydrous, ≥99%	<0.001%
300314	Petroleum ether, anhydrous	<0.001%
279544	1-Propanol, anhydrous, 99.7%	<0.005%
278475	2-Propanol, anhydrous, 99.5%	<0.003%
310328	Propylene carbonate, anhydrous, 99.7%	<0.002%
270970	Pyridine, anhydrous, 99.8%	<0.003%
277649	Reagent Alcohol, anhydrous, ≤0.003% water	≤0.003%
676829	Reagent Alcohol, anhydrous, ≤0.005% water	≤0.005%
371696	Tetrachloroethylene, anhydrous, ≥99%	<0.002%
401757	Tetrahydrofuran, anhydrous, ≥99.9%, inhibitor-free	<0.002%
186562	Tetrahydrofuran, anhydrous, contains 250 ppm BHT as inhibitor, ≥99.9%	<0.002%
522651	1,2,3,4-Tetrahydronaphthalene, anhydrous, 99%	<0.005%
293105	Tetrahydropyran, anhydrous, 99%	<0.003%
244511	Toluene, anhydrous, 99.8%	<0.001%
296104	1,2,4-Trichlorobenzene, anhydrous, ≥99%	<0.002%
372145	Trichloroethylene, anhydrous, contains 40 ppm diisopropylamine as stabilizer, ≥99%	<0.002%
304050	Triethyl orthoformate, anhydrous, 98%	<0.003%
547948	α,α,α-Trifluorotoluene, anhydrous, ≥99%	<0.001%
360066	2,2,4-Trimethylpentane, anhydrous, 99.8%	<0.003%
296325	m-Xylene, anhydrous, ≥99%	<0.002%
294780	o-Xylene, anhydrous, 97%	<0.003%
296333	p-Xylene, anhydrous, ≥99%	<0.002%

To place an order or receive technical assistance

Order/Customer Service: SigmaAldrich.com/order

Technical Service: SigmaAldrich.com/techservice

SigmaAldrich.com

© 2020 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. MilliporeSigma, the vibrant M, Sure/Seal and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

Lit. No. MS_BR1383EN Ver. 1.0 2019-26918 02/2020

Explore our Anhydrous solvents offering:
SigmaAldrich.com/anhydrous-solvents