
Flavor & Fragrance Standards

For the Food and Cosmetic Industry



The analysis of flavorings and fragrances is crucial for product development as well as for quality control in the food and cosmetic industry. However, taste and scent do not usually originate from single compounds, but rather from complex blends of aroma compounds. This makes the analysis of flavorings and fragrances a challenging task and requires a suitable analytical method as well as reliable analytical standards for improved confidence in results and instrumentation.

Sigma-Aldrich® provides a broad range of flavor and fragrance standards. Our portfolio focuses on analytical standards for aroma compounds from the “EU positive list of authorized flavoring substances” (EFSA 10/2012) and on the “Regulation (EC) No 1223/2009 of the European Parliament and of the Council on cosmetic products”.

This brochure gives an overview of our current assortment of about 600 neat standards and standard solutions, including:

- Certified reference materials (CRMs) *TraceCERT*®
- Allergenic compounds
- Sweeteners
- Flavor enhancers
- Alphabetical list of the complete flavor and fragrance standards portfolio

We continuously add new products to the portfolio in order to keep up-to-date with new developments in aroma analysis.

To find an updated product list of all flavor and fragrance standards, visit sigma-aldrich.com/flavor



Certified Reference Materials *TraceCERT*

Our broad flavor and fragrance portfolio includes certified reference materials (CRMs), which are produced in our accredited laboratory fulfilling both ISO 17025 and ISO Guide 34. All *TraceCERT* products are delivered with a comprehensive certificate according to ISO Guide 35, including properly calculated uncertainties taking into account homogeneity and stability of the material.

The neat CRMs are certified by quantitative NMR (qNMR) and traceable to NIST standard reference

materials. The Supelco branded CRM solutions are produced gravimetrically using NIST traceable weights for balance calibration.

The complete range of organic *TraceCERT* products can be found at sigma-aldrich.com/organiccrm

Currently, the following aroma compound CRMs are available:

Cat. No.	Description	Package Size
89143	Adipic acid <i>TraceCERT</i>	100 mg
44526	L-Alanine <i>TraceCERT</i>	100 mg
43621	<i>p</i> -Anisaldehyde <i>TraceCERT</i>	100 mg
51572	L-Aspartic acid <i>TraceCERT</i>	100 mg
06185	Benzoic acid <i>TraceCERT</i>	1 g, 5 g
55177	Benzyl benzoate <i>TraceCERT</i>	1 g
96996	Biphenyl <i>TraceCERT</i>	100 mg
56396	Caffeine <i>TraceCERT</i>	100 mg
79245	D-Carvone <i>TraceCERT</i>	100 mg
94676	Citric acid <i>TraceCERT</i>	100 mg
49679	<i>p</i> -Cymene <i>TraceCERT</i>	100 mg
95437	L-Cysteine <i>TraceCERT</i>	100 mg
49603	L-Cystine <i>TraceCERT</i>	100 mg
52229	<i>trans</i> -Ferulic acid <i>TraceCERT</i>	50 mg
76635	Fumaric acid <i>TraceCERT</i>	100 mg
91215	Gallic acid <i>TraceCERT</i>	100 mg
CRM47522	(±)-Geosmin <i>TraceCERT</i> solution; 100 µg/mL in methanol	1 mL
95436	L-Glutamic acid <i>TraceCERT</i>	100 mg
76523	Glutamine <i>TraceCERT</i>	100 mg
89147	Glutaric acid <i>TraceCERT</i>	100 mg
76524	Glycin <i>TraceCERT</i>	100 mg
73767	L-Histidine <i>TraceCERT</i>	100 mg
56241	L-Isoleucine <i>TraceCERT</i>	100 mg
76526	L-Leucine <i>TraceCERT</i>	100 mg
67448	L-Lysine monohydrochloride <i>TraceCERT</i>	100 mg
68714	Malonic acid <i>TraceCERT</i>	100 mg
39496	L-Methionine <i>TraceCERT</i>	100 mg
94776	Methyl hexanoate <i>TraceCERT</i>	50 mg
CRM47523	2-Methylisoborneol <i>TraceCERT</i> solution, 100 µg/mL in methanol	1 mL
07041	Methyl laurate <i>TraceCERT</i>	100 mg
55791	Methyl myristate <i>TraceCERT</i>	100 mg
38383	1-Methylnaphthalene <i>TraceCERT</i>	100 mg
75533	Methyl stearate <i>TraceCERT</i>	100 mg
40541	L-Phenylalanine <i>TraceCERT</i>	100 mg
93693	L-Proline <i>TraceCERT</i>	100 mg
53363	Resorcinol <i>TraceCERT</i>	100 mg
52341	Salicylic acid <i>TraceCERT</i>	50 mg
49894	Sodium propionate <i>TraceCERT</i>	100 mg
76137	Stearic acid <i>TraceCERT</i>	100 mg
49893	Succinic acid <i>TraceCERT</i>	100 mg
41447	L-(+)-Tartaric acid <i>TraceCERT</i>	100 mg
91515	L-Tyrosine <i>TraceCERT</i>	100 mg
80026	2,4,6-Tribromophenol <i>TraceCERT</i>	100 mg
08896	2,4,6-Trichlorophenol <i>TraceCERT</i>	100 mg
50848	L-Valine <i>TraceCERT</i>	100 mg
68654	Vanillic acid <i>TraceCERT</i>	50 mg

Allergenic Compounds

In the cosmetic industry, flavorings and fragrances are applied to neutralize unpleasant odors that may be present in the chemicals or to enhance the individuality and appeal of products.

However, the Scientific Committee on Consumer Safety (SCCS 1459/11; 06/2012) reported some fragrances as recognized contact allergens. Sigma-Aldrich is happy to offer most of these compounds as analytical standards.



Cat. No.	Description	Package Size
64397	α -Amylcinnamaldehyde	100 mg
10368	<i>trans</i> -Anethole	1 mL, 5 mL
77236	Atranol*	10 mg
39971	Benzyl alcohol <i>TraceCERT</i>	100 mg
55177	Benzyl benzoate <i>TraceCERT</i>	1 g
69139	Benzyl cinnamate*	100 mg
51031	Benzyl salicylate	1 mL
95338	2-(4- <i>tert</i> -Butylbenzyl) propionaldehyde	10 mg
50843	D-Camphor*	100 mg
79245	(+)-Carvone <i>TraceCERT</i>	100 mg
75541	(-)- <i>trans</i> -Caryophyllene	1 mL
93066	Cinnamyl alcohol	50 mg
43318	Citral	1 mL
51381	(\pm)- β -Citronellol	1 mL
72609	Coumarin <i>TraceCERT</i>	100 mg
43341	α,α -Dimethylphenethyl acetate	1 mL
79891	Eugenol <i>TraceCERT</i>	100 mg
92386	<i>trans, trans</i> -Farnesol	100 mg
48798	Geraniol	1 mL, 5 mL
45896	Geranyl acetate	1 mL
14643	16-Hexadecanolid	100 mg
09178	α -Hexylcinnamaldehyde*	1 mL
66010	Hydroxycitronellal	1 mL
55862	4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde	10 mg
34038	Isoeugenol	5 mL

Cat. No.	Description	Package Size
07055	Isoeugenyl acetate	100 mg
62118	(<i>R</i>)-(+)-Limonene	1 mL, 5 mL, 25 mL
62128	(<i>S</i>)-(-)-Limonene	1 mL, 5 mL
51782	Linalool	1 mL
74856	(-)-Linalool	1 mL, 5 mL
49599	Linalyl acetate	100 mg
50138	4-Methoxybenzyl alcohol	100 mg
68982	Methyl 2-octynoate	1 mL
76631	Methyl salicylate	1 mL, 5 mL
75264	Oakmoss Extract solution; 1mg/mL in ethanol	1 mL
80609	(-)- β -Pinene	1 mL, 5 mL
80607	(+)- β -Pinene	1 mL, 5 mL
49944	Sclareol	100 mg
77663	Terpineol	1 mL, 5 mL
PHR1245	Vanillin	1 g

*Analytical reference materials. Our analytical reference materials are certified by qNMR. The qNMR value is measured under ISO/IEC 17025 accreditation and the result is traceable to NIST standard reference materials.

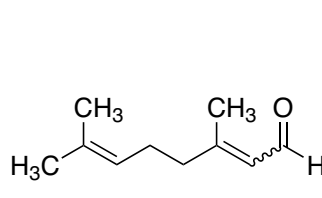


Figure 1. Molecular Structure of Citral

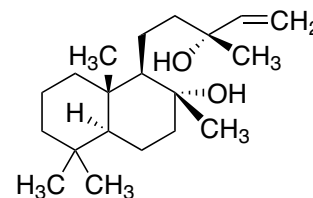


Figure 2. Molecular Structure of Sclareol

Are you already familiar with our Cosmetic Standard Portfolio?

Sigma-Aldrich offers a comprehensive range of analytical standards, including more than 300 neat and 100 single component solutions for EU-banned substances, to ensure the safety and quality of cosmetic products. Our broad portfolio also includes CRMs, which are produced in our accredited laboratory fulfilling both ISO 17025 and ISO Guide 34.

More information can be found at sigma-aldrich.com/cosmetics

Do you prefer hard copies? If so, order our brochure free of charge at sigma-aldrich.com/lit-request



Sweeteners

Natural and artificial high-intensity sweeteners are much sweeter than sugar, and much smaller amounts need to be added to the product to achieve the desired sweetness. However, due to concerns regarding customer safety, the EU introduced limits on sweeteners as food additives (European Parliament and Council Directive 94/35/EC of 30 June 1994 on sweeteners for use in foodstuffs; 2009/163/EU).

We offer our customers a comprehensive portfolio of analytical standards to monitor natural and artificial sugar substitutes. Each product has been carefully formulated to meet the needs of analysts in the food and beverage industries.

For an up-to-date product list and product ordering information, visit sigma-aldrich.com/sweeteners



Cat. No.	Description	Package Size
47134	Acesulfame K	1 g
80054	Advantame®	100 mg
47135	Aspartame	500 mg
89274	(2S-cis)-(-)-5-Benzyl-3,6-dioxo-2-piperazineacetic acid	50 mg
90378	Dulcoside A	10 mg
73132	meso-Erythritol	100 mg
PHR1002	D-(-)-Fructose	1 g
47829	D-(+)-Glucose	1 g
91443	Glycyrrhizic acid ammonium salt	10 mg
80725	Hydrocinnamic acid	100 mg
92273	Isosteviol	10 mg
PHR1025	Lactose, Anhydrous	1 g
PHR1024	D-Lactose monohydrate	1 g
PHR1007	D-Mannitol	1 g
PHR1248	Maltitol	500 mg
49777	Neotame	100 mg

Cat. No.	Description	Package Size
38462	Rebaudioside A*	10 mg
49747	Rebaudioside B	10 mg
30987	Rebaudioside C	10 mg
19189	Rebaudioside D	10 mg
62933	Rubusoside	10 mg
47840	Saccharin Calcium Salt	1 g
47827	Sodium Cyclamate	1 g
47839	Sodium Saccharin	1 g
47841	D-Sorbitol	1 g
59754	Steviolbioside	10 mg
50956	Stevioside	10 mg
90984	Sucralose	100 mg
75935	D-(-)-Tagatose	50 mg
47844	Supelco Xylitol	1 g
47253	Supelco D-(+)-Xylose	500 mg

*Analytical reference materials. Our analytical reference materials are certified by qNMR. The qNMR value is measured under ISO/IEC 17025 accreditation and the result is traceable to NIST standard reference materials.

Flavor Enhancers

Flavor enhancers are substances added to food in order to enhance or intensify its flavor. In the European Union these food additives are labeled with E numbers. The safety assessment and approval are the responsibility of the European Food Safety Authority (EFSA).

For more information and a complete product list, visit sigma-aldrich.com/enumbers

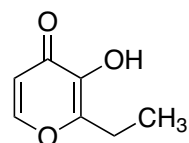


Figure 1. Molecular Structure of Ethyl maltol

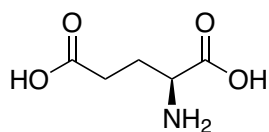


Figure 2. Molecular Structure of L-Glutamic acid

Cat. No.	Description	E number	Package Size
94185	Ethyl maltol	E637	100 mg
95436	L-Glutamic acid <i>TraceCERT</i>	E620	100 mg
01495	L-Glutamic acid monosodium salt hydrate*	E620	1 g
76524	Glycine <i>TraceCERT</i>	E640	100 mg
76526	L-Leucine <i>TraceCERT</i>	E641	100 mg

*Analytical reference materials. Our analytical reference materials are certified by qNMR. The qNMR value is measured under ISO/IEC 17025 accreditation and the result is traceable to NIST standard reference materials.

Alphabetical List of the Complete Flavor & Fragrance Standards Portfolio

On the following pages, the complete range of Sigma-Aldrich's flavor and fragrance standards is listed in alphabetical order.

Our portfolio is growing fast – please visit sigma-aldrich.com/flavor for an up-to-date product list and product ordering information.



Cat. No.	Description	Package Size
47134	Acesulfame K	1 g
506788	Acetaldehyde	1000 mg
71251	Acetic acid	5 mL
40127-U	Acetoin	1000 mg
04174	1-Acetonaphthone	1 mL
18478	2-Acetonaphthone	100 mg
90872	Acetone	5 mL
42163	Acetophenone	1 mL
05581	Acetylacetone	1 mL, 5 mL
61803	2-Acetylpyridine	1 mL
04642	3-Acetylpyridine	1 mL
30642	2-Acetylpyrrole	100 mg
73535	2-Acetylthiophene	1 mL
89143	Adipic acid <i>TraceCERT</i>	100 mg
80054	Advantame®	100 mg
41144	β-Alanine	100 mg
44526	L-Alanine <i>TraceCERT</i>	100 mg
07056	Allyl cinnamate	1 mL
18018	Allyl cyclohexanepropionate	1 mL
41894	Allyl hexanoate	1 mL, 5 mL
36682	Allyl isothiocyanate	1 g
16760	Allyl phenoxyacetate	1 mL
40647	Allyl sulfide	1 mL, 5 mL
67369	(-)-Ambroxide	100 mg
03835	γ-Aminobutyric acid	250 mg
PHR1327	Ammonium chloride	1000 mg
80067	Amyl hexanoate	1 mL
68518	Amylamine	1 mL

Cat. No.	Description	Package Size
64397	α-Amylcinnamaldehyde	100 mg
10368	<i>trans</i> -Anethole	1 mL, 5 mL
06905	α-Angelica lactone	1 mL
07406	<i>m</i> -Anisaldehyde	1 mL
43621	<i>p</i> -Anisaldehyde <i>TraceCERT</i>	100 mg
94666	<i>p</i> -Anisic acid	100 mg
96109	Anisole	5 mL, 10 mL
PHR1106	L-Arginine	1 g
47135	Aspartame	500 mg
51572	L-Aspartic acid <i>TraceCERT</i>	100 mg
77236	Atranol*	10 mg
95054	Azelaic acid	100 mg
68381	Benzalacetone	100 mg
09143	Benzaldehyde	5 mL, 25 mL
43042	2,3-Benzofuran	1 mL
06185	Benzoic acid <i>TraceCERT</i>	1 g, 5 g
80024	Benzoin	100 mg
PHR1204	Benzophenone	1 g
50475	Benzyl acetate	1 mL, 5 mL
39971	Benzyl alcohol <i>TraceCERT</i>	100 mg
55177	Benzyl benzoate <i>TraceCERT</i>	1 g
69139	Benzyl cinnamate*	100 mg
89983	Benzyl isothiocyanate	500 mg
08900	Benzyl mercaptan	1 mL
67586	Benzyl phenylacetate	1 mL
51031	Benzyl salicylate	1 mL
89274	(2 <i>S</i> - <i>cis</i>)-(-)-5-Benzyl-3,6-dioxo-2-piperazineacetic acid	50 mg
69664	Bergapten	25 mg
96996	Biphenyl <i>TraceCERT</i>	100 mg
442492	Bis(2-ethylhexyl) adipate	250 mg
50375	Bis(methylthio)methane	100 mg
95426	(-)-α-Bisabolol	1 mL
45855	(-)-Bornyl acetate	1 mL, 5 mL
09068	(±)-1,3-Butanediol	1 mL, 5 mL
42038	2,3-Butanediol	250 mg
11038	2,3-Butanedione	1 mL, 5 mL
19422	1-Butanol	5 mL
50621	<i>tert</i> -Butanol	1 mL, 5 mL
96870	2-Butanol	1 mL, 10 mL
02469	2-Butanone	5 mL
88497	3-Buten-2-ol	1 mL, 5 mL
95118	Butyl 2-methylbutyrate	1 mL, 5 mL
73285	Butyl acetate	1 mL, 5 mL
75031	Butyl anthranilate	1 mL
442667	Butyl benzoate	1000 mg
67367	Butyl butyrate	1 mL
07364	Butyl hexanoate	1 mL
68119	Butyl propionate	1 mL, 5 mL
90965	<i>sec</i> -Butylamine	1 mL
90893	Butylamine*	1 mL, 5 mL

Cat. No.	Brand	Description	Package Size
78943		Butylated hydroxyanisole*	500 mg
95338		2-(4-tert-Butylbenzyl) propionaldehyde	10 mg
PHR1022		Butylparaben	1 g
506761		4-tert-Butylphenol	1000 mg
19215		Butyric acid	5 mL
92018		β -Butyrolactone	1 mL, 5 mL
90970		γ -Butyrolactone	1 mL, 5 mL
52063		Cadaverine	1 mL
56396		Caffeine <i>TraceCERT</i>	100 mg
442505		Camphene	1000 mg
02070595		Camphor (dl)	100 mg
50843		D-Camphor*	100 mg
77403		ϵ -Caprolactam	100 mg
12084		Capsaicin	10 mg, 50 mg
40363		Carbon disulfide solution; 5000 μ g/mL in methanol	1 mL
94415		3-Carene	1 mL, 5 mL
42632		Carvacrol	50 mg
61370		(-)-Carveol, mixture of isomers	50 mg
22060		(-)-Carvone	1 mL, 5 mL
79245		D-Carvone <i>TraceCERT</i>	100 mg
75541		(-)- <i>trans</i> -Caryophyllene	1 mL
91034		(-)-Caryophyllene oxide	100 mg
93483		(+)-Cedrol	100 mg
68824		Cetyl alcohol	1 g, 5 g
27393		1,4-Cineole	1 mL, 5 mL
06536		<i>trans</i> -Cinnamaldehyde	50 mg
97013		<i>trans</i> -Cinnamic acid	50 mg
42759		Cinnamyl acetate	1 mL
93066		Cinnamyl alcohol	50 mg
43318		Citral	1 mL
94676		Citric acid <i>TraceCERT</i>	100 mg
72638		(\pm)-Citronellal	1 mL
27483		(-)- β -Citronellol	1 mL, 5 mL
51381		(\pm)- β -Citronellol	1 mL
43646		Citronellyl acetate	1 mL
72609		Coumarin <i>TraceCERT</i>	100 mg
65996		<i>m</i> -Cresol	1 mL, 5 mL
36922		Cresol	250 mg
42429		<i>p</i> -Cresol	5 g
35376		Cuelure	25 mg
16679		Cuminaldehyde	1 mL
44113		Cyclohexanol	1 mL, 5 mL
02482		Cyclohexanone	1 mL
08268		Cyclopentanol	1 mL
08299		Cyclopentanone	5 mL, 50 mL
49679		<i>p</i> -Cymene <i>TraceCERT</i>	100 mg
95437		L-Cysteine <i>TraceCERT</i>	100 mg
49603		L-Cystine <i>TraceCERT</i>	100 mg

Cat. No.	Description	Package Size
90628	<i>trans,trans</i> -2,4-Decadienal	1 mL
93738	γ -Decalactone*	1 mL
21409	Decanoic acid	5 g
59581	Decanal	1 mL
442539	1-Decanol	1000 mg
68228	2-Decanone	5 mL
44191	9-Decenoic acid	100 mg
67373	Dibenzyl disulfide	100 mg
80865	Dibutyl sebacate	1 mL
33983	Dibutyl succinate	100 mg
91969	Diethyl carbonate	1 mL, 5 mL
04151	Diethyl malonate	1 mL, 5 mL
50128	Diethyl oxalate	5 mL
53008	Diethyl phthalate	5 mL
07429	Diethyl succinate	5 mL
94463	2,3-Diethyl-5-methylpyrazine	100 mg
16877	2,3-Diethylpyrazine*	1 mL
09164	(+)-Dihydrocarvone, mixture of isomers	50 mg
00138	Dihydrojasnone	1 mL
55688	Dihydromyrcenol	1 mL
92588	3,4-Dihydroxybenzaldehyde	100 mg
08992	3,4-Dihydroxybenzoic acid	50 mg
56931	2,6-Diisopropylphenol	1 mL
PHR1194	3,4-Dimethoxybenzaldehyde	500 mg
53877	2,6-Dimethoxyphenol	100 mg
68986	Dimethyl disulfide	1 mL
04011	Dimethyl malonate	1 mL
41320	Dimethyl phthalate	1 mL, 5 mL
73605	Dimethyl succinate	1 mL
76048	Dimethyl sulfide	100 mg
94563	Dimethyl sulfoxide	1 mL, 10 mL
79592	Dimethyl trisulfide	10 mg
44527	4,5-Dimethyl-3-hydroxy-2,5-dihydrofuran-2-one	100 mg
52125	3,7-Dimethyl-3-octanol	1 mL
36713	2,3-Dimethylphenol	1000 mg
36607	2,4-Dimethylphenol	1000 g
36714	2,5-Dimethylphenol	1000 mg
36715	2,6-Dimethylphenol	1000 mg
36716	3,4-Dimethylphenol	1 g
36717	3,5-Dimethylphenol	1 g
43341	α,α -Dimethylphenethyl acetate	1 mL
07187	2,3-Dimethylpyrazine*	1 mL
84233	2,5-Dimethylpyrazine	1 mL, 5 mL
42793	2,6-Dimethylpyrazine	100 mg
43236	2-Ethyl-3(5 or 6)-dimethylpyrazine, mixture of isomers*	100 mg
48155	Diphenyl ether solution; 2000 μ g/mL in methanol	1 mL
77991	γ -Dodecalactone	1 mL

Cat. No.	Description	Package Size
92255	δ -Dodecalactone	100 mg
44010	Dodecane	5 mL, 25 mL
38688	Dodecanenitrile	1 mL, 5 mL
61609	Dodecanoic acid	5 g
75544	1-Dodecanol	1 mL, 5 mL
03411	2-Dodecanone*	1 mL, 5 mL
90378	Dulcoside A	10 mg
44818	Eicosane	1 g, 5 g
73132	<i>meso</i> -Erythritol	100 mg
34098	Estragole	1 mL
90968	1,2-Ethanedithiol	1 mL
80534	Ethanethiol	1 mL
46139	Ethanol	5 mL
55752	2-Ethoxynaphthalene	100 mg
68104	Ethyl 2-methylpentanoate*	1 mL
95563	Ethyl 2- <i>trans</i> -4- <i>cis</i> -decadienoate	25 mg
55821	Ethyl 3-hydroxybutyrate	100 mg
58958	Ethyl acetate	5 mL
63954	Ethyl acetoacetate	1 mL
76130	Ethyl acrylate	5 mL
72505	Ethyl benzoate	1 mL, 5 mL
75563	Ethyl butyrate	1 mL, 5 mL
66761	Ethyl cinnamate	100 mg
00733	Ethyl decanoate	1 mL, 5 mL
88554	Ethyl formate	1 mL, 5 mL
97587	Ethyl heptanoate	1 mL, 5 mL
08375	Ethyl hexanoate*	1 mL
19536	Ethyl isobutyrate	1 mL, 5 mL
71607	Ethyl isovalerate	1 mL
08996	Ethyl lactate	1 mL
07523	Ethyl laurate	1 mL
73539	Ethyl linoleate	1 mL
94185	Ethyl maltol	100 mg
04597	Ethyl myristate	1 mL
68203	Ethyl nicotinate	1 mL
44879	Ethyl octanoate*	1 mL, 5 mL
55441	Ethyl oleate	250 mg
67107	Ethyl palmitate	250 mg
91224	Ethyl phenylacetate	1 mL, 5 mL
96727	Ethyl propionate	1 mL
30784	Ethyl valerate	1 mL
77522	Ethyl vanillate*	25 mg
75042	Ethyl vanillin	100 mg
08607	2-Ethyl-1-hexanol	1 mL, 5 mL
16315	2-Ethyl-3-methylpyrazine*	1 mL
03079	Ethylbenzene	5 mL, 10 mL
53071	Ethylene glycol butyl ether	1 mL, 5 mL
69530	2-Ethylfuran	1 mL, 5 mL
39774	4-Ethylguaiacol	1 mL, 5 mL
02529	2-Ethylhexanoic acid	1 mL, 5 mL
52184	2-Ethylhexyl salicylate	1 mL

Cat. No.	Description	Package Size
4542585	Ethylmethacrylate	100 mg
PHR1011	Ethylparaben	1 g
36723	3-Ethylphenol	1 g
36724	4-Ethylphenol	1 g
90728	Ethylpyrazine	100 mg
29210	Eucalyptol	1 mL
79891	Eugenol <i>TraceCERT</i>	100 mg
43348	Farnesol	1 mL
46208	(+)-Fenchone	1 mL, 5 mL, 25 mL
43226	Fenchyl alcohol	100 mg
52229	<i>trans</i> -Ferulic acid <i>TraceCERT</i>	50 mg
88789	Formaldehyde dimethyl acetal	1 mL, 5 mL
PHR1002	D(-)-Fructose	1 g
76635	Fumaric acid <i>TraceCERT</i>	100 mg
67319	2-Furanmethanethiol	100 mg
04623	Furfural*	1 mL
02369	Furfuryl acetate*	1 mL
30965	Furfuryl alcohol	1 mL, 5 mL
19932	Furfuryl propionate	5 mL
57552	2-Furoic acid	100 mg
14249	2-Furyl methyl ketone	1 mL
91215	Gallic acid <i>TraceCERT</i>	100 mg
CRM47522	(\pm)-Geosmin <i>TraceCERT</i> solution; 100 μ g/mL in methanol	1 mL
48798	Geraniol	1 mL, 5 mL
45896	Geranyl acetate	1 mL
50866	[6]-Gingerol	10 mg
01514	[8]-Gingerol	10 mg
42630	[10]-Gingerol	10 mg
54328	(-)-Globulol	10 mg
47829	D-(+) Glucose	1 g
01495	L-Glutamic acid monosodium salt <i>hydrate</i> *	1 g
95436	L-Glutamic acid <i>TraceCERT</i>	100 mg
76523	Glutamine <i>TraceCERT</i>	100 mg
89147	Glutaric acid <i>TraceCERT</i>	100 mg
77067	Glycerol	1 mL, 5 mL
76524	Glycin <i>TraceCERT</i>	100 mg
91443	Glycyrrhizic acid ammonium salt	10 mg
PHR1136	Guaiacol	1.5 g
51523	Henicosane	1 g, 5 g
61696	Heptaldehyde	1 mL
43858	Heptanoic acid	1 mL, 5 mL
72954	1-Heptanol	1 mL, 5 mL
43212	3-Heptanol	1 mL
02476	2-Heptanone	1 mL
90046	3-Heptanone	1 mL, 5 mL
46204	4-Heptanone	5 mL
00931	<i>cis</i> -4-Hepten-1-al	5 mL
90244	<i>trans</i> -2-Heptenal	100 mg

Cat. No.	Description	Package Size
14643	16-Hexadecanolide	100 mg
95135	<i>cis</i> -11-Hexadecenal	1 mL
18109	Hexanal	1 mL
76717	<i>trans</i> -2-Hexen-1-al	500 mg
75034	2,3-Hexanedione	100 mg
75018	1-Hexanethiol	1 mL
21529	Hexanoic acid	5 mL
73117	1-Hexanol	1 mL, 5 mL
04649	3-Hexanol	1 mL
91316	<i>cis</i> -3-Hexen-1-ol	100 mg
74597	<i>cis</i> -3-Hexenyl acetate	1 mL
53184	Hexyl 2-methylbutanoate*	1 mL
25539	Hexyl acetate	1 mL, 5 mL
18282	Hexyl hexanoate	1 mL
61690	Hexyl salicylate*	5 mL
50803	Hexylamine	1 mL
09178	α -Hexylcinnamaldehyde*	1 mL
50797	Hexylene glycol	1 mL
73767	L-Histidine <i>TraceCERT</i>	100 mg
12448	α -Humulene	250 mg
93762	Hydrocinnamaldehyde*	1 mL
80725	Hydrocinnamic acid	100 mg
44869	4-Hydroxy-2,5-dimethyl-3(2H)-furanone	100 mg
89396	2-Hydroxy-3,5,5-trimethyl-2-cyclohexen-1-one*	100 mg
90034	4-Hydroxy-3-methoxycinnamic acid*	100 mg
78891	4-Hydroxy-4-methyl-2-pentanone	1 mL, 5 mL
55862	4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde	10 mg
98837	4'-Hydroxyacetophenone	100 mg
91554	4-Hydroxybenzaldehyde	250 mg
PHR1048	4-Hydroxybenzoic acid	1 g
36333	3-Hydroxybenzoic acid	100 mg
66010	Hydroxycitronellal	1 mL
53407	5-(Hydroxymethyl)furfural	100 mg
68524	4-(4-Hydroxyphenyl)-2-butanone	100 mg
79058	2-(4-Hydroxyphenyl)ethanol	100 mg, 500 mg
442619	Indole	1000 mg
90966	β -Ionol	1 mL
03642	Ionone	100 mg
91036	β -Ionone	100 mg
69529	Isoamyl butyrate	5 mL
95668	Isoamyl octanoate	1 mL, 5 mL
94823	Isobutyl acetate	1 mL, 5 mL
94888	Isobutyl butyrate	1 mL, 5 mL
06224	2-Isobutyl-3-methoxypyrazine	1 mL
68529	Isobutyraldehyde	1 mL, 5 mL
46935-U	Isobutyric acid	500 mg
34038	Isoeugenol	5 mL

Cat. No.	Description	Package Size
07055	Isoeugenyl acetate	100 mg
56241	L-Isoleucine <i>TraceCERT</i>	100 mg
59802	(1 <i>S</i> ,2 <i>R</i> ,5 <i>R</i>)-(+)-Isomenthol	25 mg
79857	Isopentyl acetate	1 mL, 5 mL
48545	Isophorone	5000 mg
74598	Isopropenyl acetate	1 mL
90871	Isopropyl acetate	1 mL, 5 mL, 10 mL
PHR1123	Isopropyl myristate	1 g
PHR1137	Isopropyl palmitate	1 g
47527-U	2-Isopropyl-3-methoxypyrazine solution; 100 μ g/mL in methanol	1 mL
45945	Isopropylamine	1 g
59770	(-)-Isopulegol	5 mL
68853	Isoquinoline	1 mL
92273	Isosteviol	10 mg
61848	Isovaleraldehyde	100 mg
78651	Isovaleric acid	1 mL, 5 mL
59975	Jasmone	1 mL
95197	Kojic acid	100 mg
PHR1024	D-Lactose monohydrate	1 g
PHR1025	Lactose, Anhydrous	1 g
76526	L-Leucine <i>TraceCERT</i>	100 mg
41474	Levulinic acid	100 mg
62118	(<i>R</i>)-(+)-Limonene	1 mL, 5 mL, 25 mL
62128	(<i>S</i>)-(-)-Limonene	1 mL, 5 mL
74856	(-)-Linalool	1 mL, 5 mL
51782	Linalool	1 mL
49599	Linalyl acetate	100 mg
68305	Linalyl anthranilate	1 mL
62230	Linoleic acid	5 mL, 25 mL
04991	2,6-Lutidine	5 mL
23128	L-Lysine	100 mg
67448	L-Lysine monohydrochloride <i>TraceCERT</i>	100 mg
94916	DL-Malic acid	100 mg
68714	Malonic acid <i>TraceCERT</i>	100 mg
PHR1248	Maltitol	500 mg
18299	Maltol	100 mg
PHR1007	D-Mannitol	1 g
68561	Menthallactone	5 mL
05174	DL-Menthol	100 mg
PHR1116	L-Menthol	1 g
63677	(-)-Menthone	5 mL, 25 mL
95401	Menthone	1 mL, 5 mL
45985	(1 <i>R</i>)-(-)-Menthyl acetate	1 mL, 5 mL
38229	3-Mercapto-3-methyl-butyl-formate*	100 mg
39496	L-Methionine <i>TraceCERT</i>	100 mg
89189	2-Methoxy-4-vinylphenol	100 mg
52222	4'-Methoxyacetophenone	100 mg

Cat. No.	Description	Package Size
94414	2-Methoxybenzaldehyde	100 mg
50138	4-Methoxybenzyl alcohol	100 mg
61384	<i>trans</i> -p-Methoxycinnamaldehyde	50 mg
42248	7-Methoxycoumarin	10 mg
92264	4-Methoxyphenol	250 mg
59702	4-(4-Methoxyphenyl)-2-butanone	1 mL
05517	Methyl 2-methylbutyrate	1 mL
50921	Methyl 2-nonynoate*	1 mL
68982	Methyl 2-octynoate	1 mL
77938	Methyl 3-hydroxyhexanoate	100 mg
45997	Methyl acetate	1 mL, 5 mL
18344	Methyl benzoate	1 mL, 5 mL
41263	Methyl benzoylformate	1 mL
19358	Methyl butyrate	1 mL, 5 mL
80835	Methyl cinnamate*	250 mg
75032	Methyl <i>trans</i> -cinnamate	50 mg
96848	Methyl crotonate	1 mL
80133	Methyl cyclopentenolone	100 mg
21479	Methyl decanoate	1 mL, 5 mL
59677	Methyl dihydrojasmonate	1 mL
04607	Methyl eugenol	50 mg
06547	Methyl formate	5 mL
75218	Methyl heptanoate	1 mL, 5 mL
94776	Methyl hexanoate <i>TraceCERT</i>	50 mg
36492	Methyl isovalerate	1 mL
90867	(<i>S</i>)-Methyl lactate*	1 mL
07041	Methyl laurate <i>TraceCERT</i>	100 mg
40439	Methyl methacrylate solution, 1000 µg/mL in methanol	1 mL
55791	Methyl myristate <i>TraceCERT</i>	100 mg
69193	Methyl nicotinate	100 mg
76368	Methyl nonanoate	1 mL, 5 mL
21719	Methyl octanoate	5 mL
76159	Methyl palmitate	1 g, 5 g
42958	Methyl phenylacetate	1 mL
81988	Methyl propionate	1 mL
62535	Methyl <i>p</i> - <i>tert</i> -butylphenylacetate	100 mg
76631	Methyl salicylate	1 mL, 5 mL
75533	Methyl stearate <i>TraceCERT</i>	100 mg
94560	Methyl valerate	1 mL, 5 mL
05169	N-Methyl-2-pyrrolicarboxaldehyde	1 mL
52566	2-Methyl-1-butanol	1 mL
77664	3-Methyl-1-butanol	1 mL, 5 mL
82059	2-Methyl-1-propanol	1 mL, 5 mL, 10 mL
19954	2-Methyl-2-butanol	1 mL, 5 mL
02474	4-Methyl-2-pentanone	5 mL
40349	4-Methyl-2-pentanone solution; 5000 µg/mL in methanol	1 mL
05392	2-Methyl-3-buten-2-ol	1 mL
49722	4-Methyl-3-penten-2-one*	1 mL

Cat. No.	Description	Package Size
67397	6-Methyl-5-hepten-2-one	1 mL
61352	4-Methyl-5-thiazoleethanol	100 mg
59932	4'-Methylacetophenone	1 mL
18073	2-Methylanisole	100 mg
78975	α-Methylbenzyl acetate	1 mL
46212	3-Methylbutan-2-one	5 mL
30761	2-Methylbutyl acetate	100 mg
61904	2-Methylbutyraldehyde	100 mg
39587	2-Methylfuran	1 mL, 5 mL
91307	5-Methylfurfural*	1 mL
90961	3-Methylindole	100 mg
CRM47523	2-Methylisoborneol <i>TraceCERT</i> solution, 100 µg/mL in methanol	1 mL
38383	1-Methylnaphthalene <i>TraceCERT</i>	100 mg
PHR1012	Methylparaben	1 g, 10 g
68320	3-Methylpentane	5 mL, 50 mL
PHR1223	2-Methylpyrazine	500 mg
18698	1-Methylpyrrole	1 mL, 5 mL
49597	5-Methylquinoxaline	100 mg
43919	4-Methylthiazole	1 mL, 5 mL
44638	3-(Methylthio)propionaldehyde*	500 mg
78833	2-Methylthiophene	1 mL, 5 mL
64643	Myrcene	100 mg, 500 mg
70079	Myristic acid	5 g
70158	(-)-Myrtenol	1 mL
92015	2-Naphthalenethiol	100 mg
91842	Naringin*	500 mg
75041	Neohesperidin dihydrochalcone	100 mg
49777	Neotame	100 mg
50949	Nerol	1 mL
00459	Nerolidol	1 mL
46015	Neryl acetate	1 mL
74158	Nonadecane	1 g, 5 g
61410	<i>trans,trans</i> -2,4-Nonadienal	1 mL, 5 mL
05549	<i>trans-2,cis-6</i> -Nonadienal	100 mg
44542	γ-Nonalactone*	1 mL
442719	Nonanal	1000 mg
73982	Nonanoic acid	5 mL
63969	2-Nonanone	1 mL
73867	3-Nonanone*	1 mL, 5 mL
07592	<i>trans-2</i> -Nonenal	1 mL
44889	(+)-Nootkatone	50 mg
75264	Oakmoss Extract solution; 1 mg/mL in ethanol	1 mL
51573	γ-Octalactone	100 mg
94490	δ-Octalactone, mixture of isomers	1 mL, 5 mL
52466	o-Octanal	1 mL, 5 mL
21639	Octanoic acid	5 mL
95446	1-Octanol	1 mL, 5 mL
93856	3-Octanol	1 mL

Cat. No.	Description	Package Size
02479	2-Octanone	1 mL, 5 mL
46214	3-Octanone	5 mL
52464	<i>trans</i> -2-Octenal*	1 mL, 5 mL
74900	1-Octene	5 mL, 50 mL
68225	1-Octen-3-ol	5 mL
04622	Octyl acetate	1 mL
75090	Oleic acid	5 mL, 25 mL
08066	Oleyl alcohol	100 mg
76119	Palmitic acid	5 g
N12826	2,3,4,5,6-Pentachloroanisole	1 g
48555-U	Pentachlorophenol	5000 mg
48692	Pentachlorophenol solution; <i>500 µg/mL in methanol</i>	1 mL
76509	Pentadecane	5 mL, 25 mL
69043	2,3-Pentanedione	100 mg
77597	1-Pentanol	1 mL, 5 mL, 10 mL
46211	2-Pentanone	5 mL
40129-U	3-Pentanone	1000 mg
01984	1-Penten-3-ol	250 mg
76723	1-Penten-3-one	1 mL
94575	<i>trans</i> -2-Pentenal	1 mL
40631	4-Pentenyl acetate*	250 mg
66962	Pentyl acetate	1 mL
14672	2-Pentyl butyrate	1 mL
03030	2-Pentylfuran	1 mL
04969	(S)-(-)-Perillaldehyde	1 mL
77311	(-)-Perillyl alcohol	1 mL
73747	Phenethyl acetate	1 mL, 5 mL
41346	Phenethylamine	1 mL, 5 mL
35952	Phenol	500 mg, 1 g
34366	Phenoxyacetic acid	250 mg
30311	Phenyl acetate	1 mL
38166	Phenyl acetic acid	100 mg
92528	Phenyl disulfide	100 mg
PHR1152	Phenyl salicylate	1 g
40541	L-Phenylalanine <i>TraceCERT</i>	100 mg
PHR1122	Phenylethyl alcohol	1.5 g, 5 g
45529	2-Phenylphenol	250 mg
91897	Phloretin*	10mg
79589	Phlorizin dihydrate	1 mL
55906	Phthalide	100 mg
74350	2-Picoline	500 mg
05339	3-Picoline	1 mL
40519	4-Picoline*	1 mL, 5 mL
80599	(-)- α -Pinene	1 mL, 5mL
80605	(+)- α -Pinene	1 mL, 5mL
80609	(-)- β -Pinene	1 mL, 5mL
94209	Piperazine	100 mg
76046	Piperidine	100 mg
75047	Piperine	50 mg

Cat. No.	Description	Package Size
03419	Piperonal	100 mg, 1 g
75833	Prenyl acetate	1 mL
93693	L-Proline <i>TraceCERT</i>	100 mg
12279	1,2-Propanediol	1 mL, 5 mL
91237	2-Propanol	1 mL, 5 mL, 10 mL
96566	1-Propanol	5 mL, 10 mL
64409	Propionaldehyde	1 mL, 5 mL
94425	Propionic acid	1 mL, 5 mL
61074	Propiophenone	1 mL, 5 mL
40858	Propyl acetate	1 mL, 5 mL
PHR1118	Propyl gallate	1 g
53646	Propylamine	1 mL
82569	(+)-Pulegone	5 mL
51799	Putrescine	100 mg
65693	Pyrazine	100 mg
40751	Pyrazinecarboxamide	100 mg
02486	Pyridine	1 mL
49817	Pyrrole	1 mL, 5 mL
69581	Pyrrolidine*	1 mL, 5 mL
46944-U	(-)-Quinic acid	500 mg
48457	Quinine hydrochloride dihydrate	500 mg
94517	Quinoline	1 mL
38462	Rebaudioside A*	10 mg
49747	Rebaudioside B	10 mg
30987	Rebaudioside C	10 mg
19189	Rebaudioside D	10 mg
53363	Resorcinol <i>TraceCERT</i>	100 mg
83917	(-)-Rose oxide	1 mL
83915	(+)-Rose oxide	1 mL
62933	Rubusoside	10 mg
96573	Sabinene hydrate	500 mg, 5 g
47840	Saccharin Calcium Salt	1 g
79588	D-(-)-Salicin	100 mg
03273	Salicylaldehyde	1 mL, 5 mL
52341	Salicylic acid <i>TraceCERT</i>	50 mg
49944	(-)-Sclareol	100 mg
56699	(3aR)-(+)-Sclareolide	100 mg
93878	<i>trans</i> -Sinapic acid	50 mg
PHR1231	Sodium benzoate	1 g
47827	Sodium cyclamate	1 g
49894	Sodium propionate <i>TraceCERT</i>	100 mg
47839	Sodium Saccharin	1 g
47845	Sorbic acid	1000 mg
47841	D-Sorbitol	1 g
PHR1006	D-Sorbitol	1 g
76137	Stearic acid <i>TraceCERT</i>	100 mg
PHR1115	Stearyl alcohol	1 g
19345	Steviol	10 mg
59754	Steviolbioside	10 mg
50956	Stevioside	10 mg

Cat. No.	Description	Package Size
45993	Styrene	250 mg
48347	Styrene solution; 200 µg/mL in methanol	1 mL
49893	Succinic acid <i>TraceCERT</i>	100 mg
90984	Sucralose	100 mg
94474	D-(+)-Sucrose octaacetate	100 mg
47123	Sunflower seed oil	1000 mg
08319	Syringaldehyde	100 mg
63627	Syringic acid	100 mg
75935	D-(-)-Tagatose	50 mg
41447	L-(+)-Tartaric acid <i>TraceCERT</i>	100 mg
PHR1109	Taurine	1 g
05089	δ-Tetradecalactone	1 mL
49598	(-)-Terpinen-4-ol	50 mg
49598	(-)-Terpinen-4-ol	50 mg
86476	γ-Terpinene	1 mL, 5 mL
77663	Terpineol	1 mL, 5 mL
30627	α-Terpineol	100 mg
87139	Tetradecane	5 mL, 25 mL
PHR1135	1-Tetradecanol	1 g
95162	2,3,5,6-Tetramethylpyrazine	100 mg
PHR1037	Thiamine hydrochloride	1 g
92358	Thioanisole	1 mL
04314	Thujone Standard Mixture	1 mL, 5 mL
72477	Thymol	500 mg
03416	Thymoquinone	100 mg
92819	o-Tolualdehyde	1 mL
41423	p-Tolualdehyde	1 mL, 5 mL
74103	Triacetin	1 mL, 5 mL
33489	2,4,6-Tribromoanisole	100 mg
48084	2,4,6-Tribromophenol solution; 2000 µg/mL in methanol	1 mL
80026	2,4,6-Tribromophenol <i>TraceCERT</i>	100 mg
34384	Trichloroanisole	100 mg
47526-U	2,4,6-Trichloroanisole solution; 100 µg/mL in methanol	1 mL
34023	2,4,6-Trichloroanisole-d ₅	50 mg

Cat. No.	Description	Package Size
40019	2,4,6-Trichlorophenol solution; 5000 µg/mL in methanol	1 mL
08896	2,4,6-Trichlorophenol <i>TraceCERT</i>	100 mg
14849	Triethyl citrate	1 mL
43103	Triethyl orthoformate	1 mL, 5 mL
73487	Triethylamine	1 mL, 5 mL
14239	2,6,6-Trimethyl-2-cyclohexene-1,4-dione	100 mg
41284	Trimethylamine hydrochloride	100 mg
35998	2,4,6-Trimethylphenol	250 mg
50714	2,3,5-Trimethylpyrazine	1 mL
76047	Tripropionin	100 mg
80345	Tyramine	100 mg
91515	L-Tyrosine <i>TraceCERT</i>	100 mg
89985	γ-Undecalactone	1 mL
80139	Undecanal	1 mL
94000	Undecane	5 mL, 25 mL
89764	Undecanoic acid	1 g
PS951	2-Undecanone	1000 mg
68738	6-Undecanone	1 mL
73537	10-Undecenoic acid	1 mL
76607	Urethane	100 mg
42272	Valeraldehyde	1 mL
06808	(+)-Valencene	50 mg
75054	Valeric acid	1 mL, 5 mL
40951	γ-Valerolactone	1 mL
50848	L-Valine <i>TraceCERT</i>	100 mg
68654	Vanillic acid <i>TraceCERT</i>	50 mg
PHR1245	Vanillin	1 g
15971	N-Vanillylnonanamide	50 mg, 100 mg
94882	(1S)-(-)-Verbenone	1 mL, 5 mL
47844	Xylitol	1 g
47253	D-(+)-Xylose	500 mg

*Analytical reference materials. Our analytical reference materials are certified by qNMR. The qNMR value is measured under ISO/IEC 17025 accreditation and the result is traceable to NIST standard reference materials.

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