

Legal limits in Wine

Every effort has been made to present as up to date and accurate information as possible.

Alcohol (SAWIS)	
Late harvest wines	> 10.0%
Special Late harvest wines	> 11.0%
Wine from naturally dried grapes	Actual + potential alcohol > 16.0%
Sugar (SAWIS)	
Still wines	
Extra dry	< 2.5 g/L
Dry	< 5.0 g/L
Off-dry (semi-dry)	5.0 – 12.0 g/L
Semi sweet	5.0 – 30.0 g/L
Late harvest	> 20.0 g/L
Noble Late harvest	> 50.0 g/L
Natural Sweet	> 20.0 g/L
Sparkling wines	
Brut nature	< 3.0 g/L
Extra brut	< 6.0 g/L
Brut	< 12.0 g/L
Extra dry	12.0 – 17.0 g/L
Dry	17.0 – 32.0 g/L
Semi-sweet	32.0 – 50.0 g/L
Sweet	> 50.0 g/L
Volatile acidity (SAWIS)	
Noble late harvest	< 1.8 g/L
Wine from naturally dried grapes	< 1.8 g/L
Bulk wine for exports	< 0.8 g/L
All other wines	< 1.2 g/L
Pressure (SAWIS)	
Perle	0.75 – 3 bar (75 – 300 kPa)
Sparkling wine	> 3 bar (> 300 kPa)



Preservatives		
	SAWIS	OIV
Ascorbic	< 150 mg/L	< 300 mg/L
Sorbic acid (sorbate)	< 200 mg/L	
Sulphur dioxide		
Free SO ₂		
– All wine styles	< 60 mg/L	
– Bulk wine for export	> 30 mg/L	
Total SO ₂		
– Dry white, rose wines	< 160 mg/L	< 200 mg/L
– Dry red wines	< 150 mg/L	< 150 mg/L
– Sweet wines **	< 200 mg/L	< 300 mg/L
– Noble late harvest	< 300 mg/L	< 400 mg/L
– Wine from dried grapes	< 300 mg/L	< 400 mg/L

** Note: **SAWIS** 'sweet' is defined as > 5g/L, **OIV** 'sweet' is defined as > 4g/L.

DMDC (dimethyldicarbonate)	< 100 mg/L	
Other		
Arsenic	< 0.2 mg/L	< 0.2 mg/L
Boron (as boric acid)	< 80 mg/L	< 80 mg/L
Bromine	< 1.0 mg/L	< 1.0 mg/L
Cadmium	< 0.01 mg/L	< 0.01 mg/L
Citric acid		< 1.0 g/L
Copper	< 1.0 mg/L	< 1.0 mg/L
Diethylene glycol		< 10 mg/L
Ethylene glycol		< 10 mg/L
Fluoride	< 1.0 mg/L	< 1.0 mg/L
Iron	< 10.0 mg/L	
Lead	< 0.2 mg/L	< 0.15 mg/L
Malvidin 3,5-O-diglucoside		< 15 mg/L
Mercury	< 0.05 mg/L	
Methanol		
– Red wines	< 300 mg/L	< 400 mg/L
– White, rose wines	< 300 mg/L	< 250 mg/L
Ochratoxin A		< 2 µg/L
Propylene glycol		
– Still wines		< 150 mg/L
– Sparkling wines		< 300 mg/L
Selenium	< 1.0 mg/L	
Silver		< 0.1 mg/L
Sodium	< 100 mg/L	
Sodium in excess		< 80 mg/L
Sulphates		
– Dry wines or <2 years barrel maturation		< 1 g/L
– Sweet wines or >2 years barrel maturation		< 1.5 g/L
Tin	< 100 mg/L	
Zinc	< 5.0 mg/L	< 5.0 mg/L



Sensory thresholds

		Unit	Levels in wine	Sensory threshold
Brettanomyces				
4-EP (4-ethyl phenol)	Medicinal, elastoplast, plastic	mg/L	Up to 2	0.4 – 0.6
4-EG (4-ethyl guaiacol)	Smokey, spicy	mg/L	Up to 1	0.1 – 0.3
Vinyl phenols				
4-vinyl phenol and 4-vinyl guaiacol	Pharmaceutical, cloves, phenolic	mg/L	Up to 2.5	0.7
'Cork' taint				
TCA (2,4,6-trichloroanisole)	Musty, mouldy	ng/L	Up to 50	2 – 5
TBA (2,4,6-tribromoanisole)	Musty, mouldy, pharmaceutical taint	ng/L		3 – 4
TeCA (2,3,4,6 – tetrachloroanisole)	Some mustiness, mutes wine aromas	ng/L		10 – 15
'Smoke' taint				
Guaiacol	Smokey, burnt	µg/L	Up to 1500	6 – 25
4-methyl guaiacol	Smokey, burnt	µg/L	Up to 500	65
VA				
Acetic acid	Vinegar	mg/L	> 1000	200 – 700
Ethyl acetate	Nail-polish remover, solvent	mg/L	> 150	10
Oxidation aromas				
Acetaldehyde	Sherry, nutty, brown/bruised apple	mg/L	10 – 500	100 – 120
Benzaldehyde	Raw almonds	µg/L	5 – 30	
3-methylbutanal	Malt	µg/L	4 – 100	4
2-methylpropanal	Malt	µg/L	60 – 120	6
Methional	Boiled potatoes	µg/L	0.5 – 25	0.5
Phenylacetaldehyde	Honey	µg/L	3 – 30	1
(E)-2-hexenal	Hay, sawdust	µg/L		4
(E)-2-nonenal	Hay, sawdust	µg/L		0.15
Sotolon	Curry leaf, beef stock	µg/L	0 – 20	15
Mousiness				
ACPY (2-acetyl-1-pyrroline)	Mouse-cage, popcorn	µg/L	Up to 50	0.1 - 5
ACTPY (2-acetyltetrahydropyridine)	Mouse-cage, popcorn	µg/L	Up to 500	1.6 - 100
ETPY (2-ethyltetrahydropyridine)	Mouse-cage, popcorn	µg/L	Up to 100	
Geosmin	Beetroot, turnip, earthy	ng/L	Up to 400	10 – 60



		Unit	Levels in wine	Sensory threshold
Geranium taint				
2-ethoxyhexa-3,5-diene	Crushed geranium leaves	ng/L		100
MLF				
Diacetyl (2,3-butanedione)	Nutty, caramel, butter, butterscotch, rancid	mg/L	Up to 7.5	0.2 – 2.8
Green characters				
Methoxypyrazines				
IBMP (2-isobutyl-3-methoxypyrazine)	Vegetal, green pepper, herbaceous	ng/L	1 – 40	6
IPMP (2-isopropyl-3-methoxypyrazine)	Vegetal, earthy, cooked asparagus, green beans	ng/L	< 10	2
C6-C9 fermentation esters, alcohols, aldehydes				
<i>cis</i> -3-Hexen-1-ol	Grassy, green pea, crushed leaves	µg/L	Up to 800	400
Eucalyptol	Eucalyptus, minty	µg/L	0 – 20	3.2
Fermentation thiols				
4MMP (4-mercapto-4-methylpentan-2-one)	Boxtree, blackcurrant, broom, citrus zest, sweaty	ng/L	Up to > 100	3
3MH (3-mercaptohexan-1-ol)	Passionfruit, grapefruit, citrus, sweaty	ng/L	Up to > 250	60
3MHA (3-mercaptohexylacetate)	Passionfruit, guava, gooseberry, sweaty	ng/L	Up to > 3000	4
Norisoprenoids				
β-damascenone	Floral, tropical fruit, berries, stewed apple	µg/L	5 – 6500	5 – 50
β-ionone	Floral, roses, violets	µg/L	60 – 300	
TDN (1,1,6-trimethyl-1,2-dihydronaphthalene)	Kerosene	µg/L	Up to 10	2
TPB (4-(2,3,6-trimethylphenyl)buta-1,3-diene)	Green, chemical	µg/L	50 – 200	40
Polyols				
Glycerol (not an aroma, a taste)	Sweet taste	g/L	4 – 15	5



		Unit	Levels in wine	Sensory threshold
Fermentation esters, higher alcohols, fatty acids				
Esters				
Ethyl acetate at low concentrations	Fruity	mg/L	Up to > 65	10
Ethyl acetate in spoiled wines		mg/L	>150	
Isoamyl acetate	Banana, pear	µg/L	100 – 3500	30
2-phenylethyl acetate	Floral, rose, fruity, honey	µg/L	Up to >18500	250
Isobutyl acetate	Banana, fruity	µg/L	10 – 1600	1600
Hexyl acetate	Sweet, perfume	µg/L	Up to > 5000	700
Ethyl isobutyrate	Fruity	µg/L		15
Ethyl 2-methyl butyrate	Apple, fruity	µg/L		18
Ethyl butanoate	Floral, fruity	µg/L	Up to > 1800	20
Ethyl hexanoate	Green apple, pineapple	µg/L	Up to > 3400	20
Ethyl octanoate	Sweet, soap	µg/L	Up to > 3800	10
Ethyl decanoate	Floral, soap	µg/L	Up to > 2100	200
Higher alcohols				
Propanol	Pungent, harsh	mg/L	10 – 70	500
Butanol	Fusel, spirits	mg/L	0.5 – 10	150 – 200
Isobutanol	Fusel, spirits	mg/L	10 – 150	40 – 50
Isoamyl alcohol	Spirits, nail polish, burnt	mg/L	5 – 500	30
Hexanol	Green. grass	mg/L	0.2 – 15	4
2-phenylethanol	Floral, rose	mg/L	5 – 200	10-15
Fatty acids				
Acetic acid	Adds complexity	mg/L	200 – 700	200 – 700
Acetic acid in spoiled wines	Vinegar	mg/L	>1000	
Isobutyric acid	Cheesy, rancid	mg/L	trace	2.5 – 8
Isovaleric acid	Rancid	mg/L	< 3	0.03 – 0.7
Butyric acid	Rancid	mg/L	trace	0.17 – 4
Hexanoic acid	Sweaty	mg/L	0 – 40	2 – 8
Octanoic acid	Cheesy, sweaty	mg/L	0.40	0.5 – 10
Decanoic acid	Rancid	mg/L	0.50	1 – 10
Monoterpenes				
Linalool	Rose, spicy floral, lemon	µg/L	Up to 500	25 – 100
Geraniol	Floral, fruity floral	µg/L	Up to 200	30 – 100
Citronellol	Citronella, floral	µg/L		100 – 300
Nerol	Rose, floral	µg/L	Up to 50	300 – 500
αTerpineol	Floral, citrus	µg/L	Up to 400	250 – 500
cis-Rose oxide	Lychee, roses	µg/L	0.2 – 21	0.2 – 0.5
Wine lactone	Lime, coconut	µg/L	Up to 0.1	0.01
Rotundone	Black pepper	ng/L	0 – 160	16



		Unit	Levels in wine	Sensory threshold
Oak				
Vanillin	Vanilla	mg/L	Up to 0.5	0.2 – 1
Eugenol, iso-eugenol	Clove, spice	µg/L	Up to 200	130
Guaiacol	Smokey, burnt	µg/L	Up to 40	6 – 25
4-methyl guaiacol	Smokey, burnt, spice	µg/L	Up to 20	65
Oak lactones	Fresh oak, coconut, vanilla	µg/L	Up to 1200	100 – 400
Furfural, 5-methylfurfural	Butterscotch, caramel, almond, roasted coffee	mg/L	Up to 7	
Negative volatile sulphur compounds				
H ₂ S (hydrogen sulphide)	Rotten egg	µg/L	Up to 1.5	0.5
Methanethiol (methyl mercaptan)	Cooked cabbage, onion, rubber	µg/L	Up to 1.5	0.3 – 1.5
Ethanethiol (ethyl mercaptan)	Onion, rubber	µg/L	Up to 2	1.1
Dimethyl sulphide	Asparagus, corn, molasses	µg/L	Up to 50	10
Diethyl sulphide	Cooked vegetables, onion, garlic	µg/L	0 – 1	0.9
Dimethyl disulphide	Cooked cabbage, intense onion	µg/L	Up to 10	15
Diethyl disulphide	Garlic, burnt rubber	µg/L	Up to 4.5	4

