

# GRAS Flavoring Substances 25

## FEMA EXPERT PANEL

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**25. GRAS Flavoring Substances.** This list of substances will appear in the 25<sup>th</sup> publication authored by the Expert Panel of the Flavor and Extract Manufacturers Association on recent progress in the consideration of flavoring ingredients “generally recognized as safe” (GRAS) under conditions of their intended use in food flavorings in accordance with the 1958 Food Additives Amendment to the Federal Food, Drug and Cosmetic Act.

The Expert Panel of the Flavor and Extract Manufacturers Association of the United States (FEMA) has evaluated substances for GRAS status under their conditions of intended use as flavoring substances since the early 1960s. The regulations of the U.S. Food and Drug Administration (FDA), and U.S. law, require that determinations that flavor substances and other food ingredients are “generally recognized as safe” (GRAS) be done in such a way that all information related to GRAS determinations is publicly available. The FEMA Expert Panel has met this requirement by publishing the identity of all flavoring substances determined to be GRAS by the Panel, and has submitted all information related to its GRAS reviews on these substances to the FDA for inclusion in the FDA databases. Information that was reviewed by the Expert Panel in the course of their evaluation is typically submitted to FDA within six months of the publication of the identity of newly GRASed substances. The Expert Panel also publishes separate extensive reviews of scientific information on all FEMA GRAS™ flavoring substances in the peer-reviewed scientific literature in the form of reports on the safety of structurally-related groups of flavoring substances. These important actions assure that there is “general recognition” of the safety of these substances when used as flavors.

DISCLAIMER: The user of this list agrees that its use of this document and the information contained therein is at the user’s sole risk and that FEMA shall have no liability to any person for any loss or damage arising out of the use of this document.

**Table 1 – Primary Names (in boldface capital letters) and Synonyms (in lower case)**

FEMA No.	Substance Primary Name and Synonyms	FEMA No.	Substance Primary Name and Synonyms	FEMA No.	Substance Primary Name and Synonyms	FEMA No.	Substance Primary Name and Synonyms
2566	<b>2-HEXYL-4-ACETOXYTETRAHYDROFURAN (RE-GRAS)</b> 3-Furanol, 5-hexyltetrahydroacetate	4674	<b>TRILOBATIN</b> Prunin dihydrochalcone Phloretin 4'-glucoside 1-Propanone, 1-[4-( <i>beta</i> -D-glucopyranosyloxy)-2,6-dihydroxyphenyl]-3-(4-hydroxyphenyl)-	4682	<b>OCTAHYDRO-4,8A-DIMETHYL-4A(2H)-NAPHTHOL</b> Geosmin Octahydro-4,8a-dimethyl-4a(2H)-naphthol 4,8a-Dimethyloctahydronaphthalen-4a(2H)-ol 4a(2H)-Naphthalenol, octahydro-4,8a-dimethyl- 1,10-Dimethyl-9-decalol	4690	<b>HONEYSUCKLE EXTRACT</b> <i>Honeysuckle, Lonicera japonica, ext.</i>
3211	<b>2-METHYL-5-VINYLPYRAZINE (RE-GRAS)</b> Pyrazine, 2-ethenyl-5-methyl-	4675	<b>L-ISOLEUCINE</b> (S)-Isoleucine (2S,3S)-2-Amino-3-methylpentanoic acid [S-(R*,R*)]-2-Amino-3-methylpentanoic acid	4683	<b>2-METHYL-4,5-DIHYDROFURAN-3-THIOL</b> 3-Furanthiol, 4,5-dihydro-2-methyl-2-Methyl-4,5-dihydrofuran-3-thiol 3-Mercapto-2-methyl-4,5-dihydrofuran 4,5-Dihydro-2-methyl-3-mercaptofuran	4691	<b>YUZUNONE</b> 6,8E,10-Undecatrien-3-one
4667	<b>2(4)-ETHYL-4(2),6-DIMETHYLDIHYDRO-1,3,5-DITHIAZINE (MIXTURE OF ISOMERS)</b> 2(4)-Ethyl-4(2),6-dimethyldihydro-1,3,5-dithiazinane Ethyl thialdine	4676	<b>1-(2-FURFURYLTHIO)PROPANONE</b> 1-(Furan-2-ylmethylsulfanyl)propan-2-one 2-Propanone, 1-[(2-furanylthio)thio]- (Furfurylthio)acetone 1-[(2-Furylmethyl)sulfanyl]acetone	4684	<b>(2S,5R)-N-[4-(2-AMINO-2-OXOETHYL)PHENYL]-5-METHYL-2-(PROPAN-2-YL)CYCLOHEXANECARBOXAMIDE</b> Benzeneacetamide, 4-[[[(2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl]carbonyl]amino]-	4692	<b>L-METHIONYLGLYCINE</b>
4668	<b>(2E,6E,Z,8E)-N-(2-METHYLPROPYL)-2,6,8-DECATRIENAMIDE</b> Spilanthol <i>N</i> -Isobutyl-2 <i>E</i> -decenamide Affinin	4677	<b>(±)-4-METHYL-2-PROPYL-1,3-OXATHIANE</b> 1,3-Oxathiane, 4-methyl-2-propyl-	4685	<b>(±)-6-OCTYLTETRAHYDRO-2H-PYRAN-2-ONE</b> 5-Tridecanolide 6-Octyltetrahydro-2 <i>H</i> -pyran-2-one Tetrahydro-6-octyl-2 <i>H</i> -pyran-2-one <i>delta</i> -Tridecalactone 5-Hydroxytridecanoic acid <i>delta</i> lactone <i>delta</i> -Octylvalerolactone Trideca-1,5-lactone	4693	<b>N-CYCLOPROPYL-5-METHYL-2-ISOPROPYLCYCLOHEXANE-CARBOXAMIDE</b> Cyclohexanecarboxamide, <i>N</i> -cyclopropyl-5-methyl-2-(1-methylethyl)-
4669	<b>4-AMINO-5,6-DIMETHYLTHIENO[2,3-D]PYRIMIDIN-2(1H)-ONE</b> 4-Amino-5,6-dimethylthieno[2,3-d]pyrimidin-2(1 <i>H</i> )-one hydrochloride	4678	<b>N-(2-METHYLCYCLOHEXYL)-2,3,4,5,6-PENTAFLUOROBENZAMIDE</b> PFMC Benzamide	4686	<b>(±)-2-METHYLTETRAHYDROFURAN-3-THIOL ACETATE</b> 2-Methyltetrahydrofuran thioacetate 2-Methyl-3-thioacetoxytetrahydrofuran Ethanethioic acid, S-(tetrahydro-2-methyl-3-furanyl) ester 2-Methyltetrahydrofuran-3-thiol acetate	4694	<b>3-PENTANETHIOL</b> Pentane-3-thiol 3-Pentyl mercaptan
4670	<b>1,1-PROPANEDITHIOL</b> 1,1-Dimercaptopropane	4679	<b>ARACHIDONIC ACID ENRICHED OIL</b> AREO Arasco	4687	<b>(±)-3-HYDROXY-3-METHYL-2,4-NONANEDIONE</b> Lactadione	4695	<b>2-ETHYL-2,5-DIHYDRO-4-METHYLTHIAZOLE</b> 2-Ethyl-4-methyl-3-thiazoline
4671	<b>Z-5-OCTENYL ACETATE</b> <i>cis</i> -5-Octenyl acetate (5 <i>Z</i> )-Octen-1-ol acetate	4680	<b>5-ISOPROPYL-2,6-DIETHYL-2-METHYLTETRAHYDRO-2H-PYRAN</b> 2,6-Diethyl-2-methyl-5-(propan-2-yl)tetrahydro-2 <i>H</i> -pyran 2 <i>H</i> -Pyran, 2,6-diethyltetrahydro-2-methyl-5-(1-methylethyl)-	4688	<b>1,1-DIPROPOXYETHANE</b> Acetaldehyde, dipropyl acetal	4696	<b>1-(METHYLDITHIO)-2-PROPANONE</b> Methyl 2-oxopropyl disulfide 1-(Methyldisulfanyl)acetone 1-Methyldisulfanylpropan-2-one
4672	<b>(E)-4-UNDECENAL</b> <i>trans</i> -Undec-4-enal 4 <i>E</i> -Undecenal	4681	<b>(1R,2S,5R)-N-(4-METHOXYPHENYL)-5-METHYL-2-(1-METHYLETHYL)CYCLOHEXANECARBOXAMIDE</b> <i>N</i> -(4-Methoxyphenyl)- <i>p</i> -menthanecarboxamide (1 <i>R</i> ,2 <i>S</i> ,5 <i>R</i> )- <i>N</i> -(4-Methoxyphenyl)-5-methyl-2-(1-methylethyl)cyclohexanecarboxamide	4689	<b>CHRYSANTHEMUM EXTRACT</b> <i>Chrysanthemum morifolium, ext.</i>	4697	<b>5-METHYLFURFURYL MERCAPTAN</b> (5-Methylfurfuryl)mercaptan 5-Methyl-2-furanmethanethiol (5-Methylfuran-2-yl)methanethiol
4673	<b>DELTA-HEXADECALACTONE</b> Tetrahydro-6-undecyl-2 <i>H</i> -pyran-2-one 6-Undecyltetrahydro-2 <i>H</i> -pyran-2-one <i>delta</i> -Hexadecanolide <i>delta</i> -Palmitolactone 5-Hexadecanolide 5-Hydroxyhexadecanoic acid <i>delta</i> lactone 6-Undecyltetrahydro-2 <i>H</i> -pyran-2-one					4698	<b>4-MERCAPTO-3-METHYL-2-BUTANOL</b> 4-Mercapto-3-methylbutan-2-ol 3-Methyl-4-sulfanyl-2-butanol 4-Thio-3-methyl-2-butanol
						4699	<b>FERROUS L-LACTATE</b> <i>L</i> -2-Hydroxy-propanoic acid, iron (2+) salt dihydrate
						4700	<b>O-TRANS-COUMARIC ACID</b> 2-Propenoic acid, 3-(2-hydroxyphenyl)-, ( <i>E</i> )- Cinnamic acid, <i>o</i> -hydroxy-, ( <i>E</i> )- ( <i>E</i> )-2-Hydroxycinnamic acid

FEMA No.	Substance Primary Name and Synonyms	FEMA No.	Substance Primary Name and Synonyms	FEMA No.	Substance Primary Name and Synonyms
4701	<b>3-[(4-AMINO-2,2-DIOXIDO-1H-2,1,3-BENZOTHIADIAZIN-5-YL)OXY]-2,2-DIMETHYL-N-PROPYLPROPANAMIDE</b> 3-(4-Amino-1H-benzoc[1,2,6]thiadiazin-5-yloxy-2,2-dimethyl-N-propylpropanamide-2,2-dioxide 3-(1H-Benzo[c][1,2,6]thiadiazin-4-amine-2,2-dioxide)-5-yloxy-2,2-dimethyl-N-propylpropanamide	4711	<b>LUO HAN FRUIT CONCENTRATE</b> Luo han guo concentrate Luo han kuo concentrate <i>Siraitia grosvenorii</i> concentrate <i>Fructus momordicae</i> concentrate Buddha's Fruit concentrate Monk's Fruit concentrate Longevity Fruit concentrate <i>Rakanka</i> concentrate	4718	<b>2-[2-(P-MENTHYLOXY)ETHOXY]ETHANOL</b> 2-[(2-p-Menthoxyl)ethoxy]ethanol 2-[2-(2-Isopropyl-5-methyl-cyclohexyloxy)-ethoxy]-ethanol 2-[2-(p-Menthan-3-yloxy)ethoxy]ethanol
4702	<b>2(3),5-DIMETHYL-6,7-DIHYDRO-5H-CYCLOPENTAPYRAZINE</b>	4712	<b>L-ALANYL-L-GLUTAMINE</b> Glutamine, N2-L-alanyl-	4719	<b>SUCCINIC ACID</b> Butanedioic acid 1,2-Ethanedicarboxylic acid
4703	<b>CINNAMYL BENZOATE</b> 3-Phenyl-2-propenyl benzoate	4713	<b>SUCROSE MONOPALMITATE</b> <i>alpha-D</i> -glucopyranoside, monoheptadecanoate <i>beta-D</i> -fructofuranoside, monoheptadecanoate	4720	<b>REBAUDIOSIDE C</b> Dulcoside B
4704	<b>BETA-NAPHTHYL METHYL ETHER</b> 2-Methoxynaphthalene 2-Naphthol methyl ether 2-Naphthyl methyl ether	4714	<b>ETHYL 2-MERCAPTO-2-METHYLPROPIONATE</b> Ethyl 2-methyl-2-sulfanylpropanoate Ethyl 2-mercapto-2-methylpropanoate Propanoic acid, 2-mercapto-2-methyl-, ethyl ester	4721	<b>1-(2-HYDROXYPHENYL)-3-(PYRIDIN-4-YL)PROPAN-1-ONE</b>
4705	<b>ROSEMARY OLEORESIN</b> <i>Rosemarinus officinalis</i> oleoresin	4715	<b>2-(3,4-DIHYDROXYPHENYL)-5,7-DIHYDROXY-4-CHROMANON</b> 4H-1-Benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-2,3-dihydro-5,7-dihydroxy- (±)-Eriodictyol (±)-3',4',5,7-Tetrahydroxyflavanone	4722	<b>1-(2-HYDROXY-4-ISOBUTOXYPHENYL)-3-(PYRIDIN-2-YL)PROPAN-1-ONE</b>
4706	<b>9-DECEN-2-ONE</b> Dec-9-en-2-one Methyl oct-7-enyl ketone	4716	<b>N-[N-[3-(3-HYDROXY-4-METHOXYPHENYL)PROPYL]-L-ALPHA-ASPARTYL]-L-PHENYLALANINE 1-METHYLESTER, MONOHYDRATE</b> Advantame	4723	<b>1-(2-HYDROXY-4-METHOXYPHENYL)-3-(PYRIDIN-2-YL)PROPAN-1-ONE</b>
4707	<b>1-(METHYLTHIO)-3-OCTANONE</b> 1-Methylsulfanyloctan-3-one	4717	<b>SWEET BLACKBERRY LEAVES EXTRACT</b> Chinese Blackberry Extract <i>Rubus suavissimus</i> S. Lee, ext. <i>Rubus chingii</i> Hu, ext. <i>Rubus palmatus</i> Thunb., ext.	4724	<b>TRANS-4-TERT-BUTYLCYCLOHEXANOL</b> <i>trans</i> -1-tert-Butylcyclohexan-4-ol <i>trans-p</i> -tert-Butylcyclohexanol
4708	<b>3',7-DIHYDROXY-4'-METHOXYFLAVAN</b> (±)-3',7-Dihydroxy-4'-methoxyflavan 3,4-Dihydro-2-(3-hydroxy-4-methoxyphenyl)-2H-1-benzopyran-7-ol	4718	<b>2-[2-(P-MENTHYLOXY)ETHOXY]ETHANOL</b> 2-[(2-p-Menthoxyl)ethoxy]ethanol 2-[2-(2-Isopropyl-5-methyl-cyclohexyloxy)-ethoxy]-ethanol 2-[2-(p-Menthan-3-yloxy)ethoxy]ethanol	4725	<b>3-(1-((3,5-DIMETHYLISOXAZOL-4-YL)METHYL)-1H-PYRAZOL-4-YL)-1-(3-HYDROXYBENZYL)IMIDAZOLIDINE-2,4-DIONE</b> 2,4-Imidazolinedione, 3-[1-[(3,5-dimethyl-4-isoxazolyl)methyl]-1H-pyrazol-4-yl]-1-[(3-hydroxyphenyl)methyl]-
4709	<b>GLUTAMYL-VALYL-GLYCINE</b> <i>L-gamma</i> -Glutamyl-L-valyl-glycine <i>N</i> -( <i>N</i> - <i>L-gamma</i> -Glutamyl-L-valyl)-glycine	4719	<b>SUCCINIC ACID</b> Butanedioic acid 1,2-Ethanedicarboxylic acid	4726	<b>3-(1-((3,5-DIMETHYLISOXAZOL-4-YL)METHYL)-1H-PYRAZOL-4-YL)-1-(3-HYDROXYBENZYL)-5,5-DIMETHYLIMIDAZOLIDINE-2,4-DIONE</b> 2,4-Imidazolinedione, 3-[1-[(3,5-dimethyl-4-isoxazolyl)methyl]-1H-pyrazol-4-yl]-1-[(3-hydroxyphenyl)methyl]-5,5-dimethyl-
4710	<b>L-THREONINE</b> (S)-Threonine [R-(R*,S*)]-2-Amino-3-hydroxybutanoic acid	4720	<b>REBAUDIOSIDE C</b> Dulcoside B	4727	<b>CLOVER HERB DISTILLATE</b> Yellow sweet clover distillate Sweet clover distillate <i>Mellilotus officinalis</i> distillate

**Table 2 – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances on which the FEMA Expert Panel based its judgments that the substances are generally recognized as safe (GRAS).**

	2-Hexyl-4-acetoxytetrahydrofuran	2-Methyl-5-vinylpyrazine	2(4)-Ethyl-4(2),6-dimethyl dihydro-1,3,5-dithiazine (mixture of isomers)	(2E,6EZ,8E)-N-(2-Methylpropyl)-2,6,8-decatrienamamide	4-Amino-5,6-dimethyl thieno[2,3-d]pyrimidin-2(1H)-one	1,1-Propane dithiol	Z-5-Octenyl acetate	(E)-4-Undecenal	Delta-Hexa decalactone	Trilobatin
Category	FEMA No. 2566	3211	4667	4668	4669	4670	4671	4672	4673	4674
Baked goods	0.3/3	4/9	0.5/1		5/10	0.01/0.05	8/10	0.05/0.1	10/50	
Beverages (Non-alcoholic)	0.1/1	0.1/2		15/30	7.5/15		6/8	0.05/0.08	10/50	100/100
Beverages (Alcoholic)		1/3		12.5/30	7.5/15			0.08/0.1		
Breakfast cereal			0.5/1	15/30	10/20	0.01/0.05	8/10	0.05/0.08	5/25	100/100
Cheese			0.5/1			0.01/0.05			2/10	
Chewing gum				100/250	10/50		10/12	0.08/0.1		
Condiments/Relishes			0.5/1	5/15		0.01/0.05			2/10	
Confectionery frostings				35/75	10/25			0.05/0.08	10/50	
Egg products										
Fats/Oils			1/2			0.02/0.08	9/11	0.08/0.1	10/50	
Fish products				5/15					2/10	
Frozen dairy	0.3/3	2/5		12.5/25	7.5/15		8/10		10/50	
Fruit ices				12.5/25	7.5/15		8/10	0.05/0.08	2/10	
Gelatins/Puddings		1/3		12.5/20	5/10		8/10	0.05/0.08		
Granulated Sugar							8/10			
Gravies			0.5/1			0.01/0.05			10/50	
Hard candy				115/175	10/25		8/10	0.08/0.1	50/250	
Imitation dairy			0.5/1		7.5/15	0.02/0.08			10/50	
Instant coffee/tea							8/10	0.05/0.08		
Jams/Jellies				12.5/25	10/25		8/10	0.05/0.08		
Meat products			1/2			0.02/0.08		0.05/0.08	2/10	
Milk products			0.5/1		7.5/15	0.01/0.05	8/10		10/50	250/750
Nut products										
Other grains										
Poultry			0.5/1			0.02/0.08		0.05/0.08	2/10	
Processed fruits				2.5/10			8/10			
Processed vegetables			0.5/1			0.01/0.05		0.05/0.08		
Reconstituted vegetables										
Seasonings/Flavors			1/10	12.5/25	5/15	0.08/0.1	8/10	0.05/0.08	50/250	
Snack foods			1/2	25/50	5/15	0.02/0.08			20/100	
Soft candy	0.3/3	4/9		115/150	10/25		8/10	0.05/0.08		
Soups			0.5/1	7.5/15		0.01/0.05	8/10		5/25	
Sugar substitutes					300/600					
Sweet sauces					10/25		8/10	0.05/0.08		

**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	<i>L</i> - Isoleucine	1-(2-Furfurylthio)-propanone	(±)-4-Methyl-2-propyl-1,3-oxathiane	<i>N</i> -(2-Methylcyclohexyl)-2,3,4,5,6-pentafluoro benzamide	Arachidonic acid enriched oil	5-Isopropyl-2,6-diethyl-2-methyltetrahydro-2 <i>H</i> -pyran	(1 <i>R</i> ,2 <i>S</i> ,5 <i>R</i> )- <i>N</i> -(4-Methoxyphenyl)-5-methyl-2-(1-methylethyl)-cyclohexane carboxamide	Octahydro-4,8a-dimethyl-4a(2 <i>H</i> )-naphthol	2-Methyl-4,5-dihydrofuran-3-thiol	(2 <i>S</i> ,5 <i>R</i> )- <i>N</i> -[4-(2-Amino-2-oxoethyl)phenyl]-5-methyl-2-(propan-2-yl)cyclohexane carboxamide
<b>Category</b>	<b>4675</b>	<b>4676</b>	<b>4677</b>	<b>4678</b>	<b>4679</b>	<b>4680</b>	<b>4681</b>	<b>4682</b>	<b>4683</b>	<b>4684</b>
Baked goods	50/50	1/3	0.4/1	10/20	1/10	5/25	1/5	0.1/4		10/50
Beverages (Non-alcoholic)	200/250	1/2	0.4/1	1/5		1/10	1/5	1/5		
Beverages (Alcoholic)	50/50	1/2	0.2/1			4/20	1/10	1/5		
Breakfast cereal	50/50		0.1/1			1/10	1/5	0.1/1		
Cheese					5/50			0.1/1		400/800
Chewing gum			0.3/1	10/20		500/2000	100/500	1/2.5		
Condiments/Relishes					1/10			0.1/1		25/100
Confectionery frostings		2/5	0.3/1	1/5		2/20	1/10	1/5		
Egg products						2/20	1/10	0.1/1		
Fats/Oils						2/20	1/10	0.1/1		
Fish products								0.1/1		
Frozen dairy				1/5		20/100	5/20	0.1/1		
Fruit ices			0.1/1	1/5		10/50	2/20	1/5		
Gelatins/Puddings				1/5		10/50	2/20	1/5		
Granulated Sugar						10/50	2/20	0.1/1		
Gravies		2/5	0.1/1		10/50			0.1/1		25/100
Hard candy		1/2	0.1/1	1/5		10/50	2/20	1/3		
Imitation dairy					1/10	5/10	1/5	0.1/1		
Instant coffee/tea		2/5		1/5		2/10	1/5	0.1/1		20/100
Jams/Jellies			0.1/1	5/10		10/50	2/20	1/3		
Meat products	50/50	2/5	0.1/1		10/50			0.1/1	0.3/3	
Milk products	50/50			1/5	1/10	2/10	1/5	0.1/1	0.05/0.2	
Nut products								0.1/1		
Other grains								0.1/1		
Poultry		0.1/1			10/100			0.1/1		
Processed fruits			0.2/1	1/5		2/10	1/5	0.1/1		
Processed vegetables			0.2/1					0.1/1		
Reconstituted vegetables								0.1/1		
Seasonings/Flavors			0.2/1		10/50	10/50		1/3	0.2/1	
Snack foods		1/3	0.2/1		10/50			0.1/1	3/10	20/100
Soft candy			0.1/1	1/5		3/50	1/20	1/3		
Soups	50/50	1/2			10/50	4/50	1/20	0.1/1	0.3/2	
Sugar substitutes						3/50	1/20	0.1/1		
Sweet sauces				1/5				0.1/1		

**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	(±)-6- Octyltetrahydro -2H-pyran-2- one	(±)-2-Methyl- tetrahydro- furan-3-thiol acetate	(±)-3-Hydroxy- 3-methyl-2,4- nonanedione	1,1-Dipropoxy ethane	Chrysanthemum extract	Honeysuckle extract	Yuzunone	L- Methionyl glycine	(2S,5R)-N- Cyclopropyl- 5-methyl-2- isopropyl- cyclohexane carboxamide	3- Pentanethiol
<b>Category</b>	<b>4685</b>	<b>4686</b>	<b>4687</b>	<b>4688</b>	<b>4689</b>	<b>4690</b>	<b>4691</b>	<b>4692</b>	<b>4693</b>	<b>4694</b>
Baked goods	0.5/5	0.1/0.5	5/20				0.06/0.6	50/1000		0.01/0.1
Beverages (Non-alcoholic)	0.1/2	0.01/0.03	1/3	24/50		100/200	0.002/0.01 5		10/40	
Beverages (Alcoholic)		0.02/0.05	5/20				0.004/0.03			
Breakfast cereal		0.01/0.03	2/10			100/200				
Cheese		0.1/0.2	5/20					50/1000		
Chewing gum		0.01/0.03	10/20		400/400	100/200	0.2/2		1200/4000	
Condiments/Relishes		0.01/0.03			50/200		0.01/0.03			0.01/0.1
Confectionery frostings		0.01/0.03	1/5		50/200	100/200	0.1/0.3		20/100	
Egg products		0.01/0.03								
Fats/Oils		0.01/0.03	5/30				1/5			
Fish products		0.01/0.03								
Frozen dairy		0.01/0.03	1/5			100/200	0.005/0.05			
Fruit ices		0.01/0.03	1/3			100/200	0.003/0.02			
Gelatins/Puddings		0.02/0.05	1/3			100/200	0.006/0.05			
Granulated Sugar		0.01/0.03				100/200				
Gravies		0.01/0.03			20/40			50/1000		0.01/0.1
Hard candy		0.01/0.03	1/5		70/200	100/200	0.01/0.025		100/400	
Imitation dairy	1/10	0.01/0.03	5/30					50/1000		
Instant coffee/tea		0.01/0.03	1/3							
Jams/Jellies		0.02/0.05	1/3			100/200	0.01/0.025		10/30	
Meat products		0.02/0.05	2/5							0.01/0.1
Milk products	0.5/5	0.01/0.04	5/30			100/200	0.06/0.2	50/1000		
Nut products		0.01/0.03				100/200				
Other grains		0.01/0.03								
Poultry		0.02/0.05				100/200				0.01/0.1
Processed fruits		0.01/0.03								
Processed vegetables		0.01/0.03						50/1000		0.02/0.1
Reconstituted vegetables		0.01/0.03								
Seasonings/Flavors		0.01/0.03	100/2000		50/200			50/1000		0.01/0.1
Snack foods		0.01/0.03	5/20		50/200	100/200	0.006/0.12	50/1000		0.01/0.1
Soft candy		0.01/0.03	1/5		50/200	100/200	0.015/0.2		100/300	
Soups		0.01/0.03	1/10		50/200		0.003/0.02	50/1000		0.01/0.1
Sugar substitutes		0.01/0.03				100/200				
Sweet sauces		0.02/0.05	1/10		50/200	100/200	0.03/0.12			

**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	2-Ethyl-2,5-dihydro-4-methylthiazole	1-(Methylthio)-2-propanone	5-Methylfurfuryl mercaptan	4-Mercapto-3-methyl-2-butanol	Ferrous L-lactate	<i>o-trans</i> -Coumaric acid	3-[(4-Amino-2,2-dioxido-1 <i>H</i> -2,1,3-benzothiadiazin-5-yl)oxy]-2,2-dimethyl- <i>N</i> -propyl propanamide	2(3),5-Dimethyl-6,7-dihydro-5 <i>H</i> -cyclopenta pyrazine	Cinnamyl benzoate	<i>beta</i> -Naphthyl methyl ether
<b>Category</b>	<b>4695</b>	<b>4696</b>	<b>4697</b>	<b>4698</b>	<b>4699</b>	<b>4700</b>	<b>4701</b>	<b>4702</b>	<b>4703</b>	<b>4704</b>
Baked goods		0.5/1		0.2/0.5		20/30	10/22	10/15	15.2/24.3	13/17
Beverages (Non-alcoholic)	0.1/0.5		0.005/0.05			10/30		10/15	3.63/7.13	4/8
Beverages (Alcoholic)	0.1/0.5					10/30		10/15	2/4	0.1/0.3
Breakfast cereal						20/30	15/22	10/15		
Cheese					10/100			10/15		
Chewing gum	0.2/0.5					20/50	30/300	10/15		9/14
Condiments/Relishes		0.5/1		0.2/0.5	20/200		3/22	10/15		
Confectionery frostings						10/30	10/22	10/15		
Egg products					10/100					
Fats/Oils					10/100			20/25		
Fish products					10/100					
Frozen dairy	0.1/0.5					10/30	5/22	10/15	5/10	8/10
Fruit ices	0.1/0.5					10/30	5/22	10/15		
Gelatins/Puddings	0.1/0.5					10/30	5/22	12/18	10/20	9/11
Granulated Sugar								10/15		
Gravies	0.1/0.5	0.5/1		0.2/0.5	20/200			15/20		
Hard candy	0.1/0.5					10/30	15/75	20/25		3/3
Imitation dairy								10/15		
Instant coffee/tea			0.005/0.05			10/30		10/15		
Jams/Jellies							10/22	10/15		
Meat products		0.5/1		0.2/0.5	20/200				2/5	
Milk products						5/20	3/22	10/15		
Nut products								10/15		
Other grains								10/15		
Poultry		0.5/1		0.2/0.5	20/200					
Processed fruits										
Processed vegetables		0.5/1		0.2/0.5						
Reconstituted vegetables								10/15		
Seasonings/Flavors	0.1/0.5	0.5/1		0.2/0.5	20/200			10/15		
Snack foods		0.5/1		0.2/0.5	20/200			10/15		
Soft candy						10/30	15/75	10/15	9/18	12/14
Soups	0.1/0.5	0.5/1		0.2/0.5	20/200	10/20		10/15		
Sugar substitutes						10/30		10/15		
Sweet sauces	0.1/0.5						10/22	10/15		

**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	Rosemary oleoresin	9-Decen-2-one	1-(Methylthio)-3-octanone	3',7-Dihydroxy-4'-methoxyflavan	Glutamyl-valyl-glycine	L-Threonine	Luo han fruit concentrate	L-Alanyl-L-glutamine	Sucrose monopalmitate	Ethyl 2-mercapto-2-methylpropionate
Category	4705	4706	4707	4708	4709	4710	4711	4712	4713	4714
Baked goods	20/2000		0.1/5	50/300		50/200	40/60	1400/3000	4/100	0.1/0.5
Beverages (Non-alcoholic)	20/2000	5/25		50/500		50/200	40/60	60/600	0.2/50	0.1/0.5
Beverages (Alcoholic)	20/2000	10/50		100/500		50/200	40/60	60/600	0.2/50	0.1/0.5
Breakfast cereal				50/400		50/200	40/80	600/3000	0.1/100	0.1/0.5
Cheese			0.1/5	50/400		50/200		1400/3000	0.1/100	
Chewing gum		30/150		50/600		50/200		100/500	0.5/50	0.1/0.5
Condiments/Relishes			0.1/5			50/200	5/40	2000/5000	5/100	
Confectionery frostings		30/150		50/300		50/200	40/80	300/500	0.5/50	0.1/0.5
Egg products			0.1/5			50/200		1000/2000	0.1/50	
Fats/Oils			0.1/5	50/300		50/200		200/600	0.1/50	
Fish products				50/300		50/200		1000/2500	0.1/100	
Frozen dairy		5/15		50/300	20/50	50/200	5/80	1400/3000	0.1/30	0.1/0.5
Fruit ices		5/15		50/400		50/200	5/40	200/600	0.1/50	0.1/0.5
Gelatins/Puddings				50/300		50/200	40/80	200/500	0.1/50	
Granulated Sugar				50/400		50/200				
Gravies			0.1/5	50/500		50/200		1400/3000	0.1/50	0.1/0.5
Hard candy				50/500		50/200	40/80	200/600	0.1/5	0.1/0.5
Imitation dairy				50/500		50/200	5/40	1400/3000	0.5/5	
Instant coffee/tea				50/400		50/200		300/600	0.1/50	0.1/0.5
Jams/Jellies				50/500		50/200	10/40	300/500	0.1/100	0.1/0.5
Meat products	20/2000		0.1/5	50/300		50/200		1400/3000	0.1/100	
Milk products		10/30		50/400	15/45	50/200	40/80	1400/3000	0.5/200	0.1/0.5
Nut products						50/200	5/40	300/1000	0.1/100	
Other grains						50/200		300/2000	0.1/50	
Poultry			0.1/5			50/200		1000/2000	0.1/50	
Processed fruits		10/30				50/200	5/40	60/300	0.1/5	0.1/0.5
Processed vegetables			0.1/5			50/200		300/500	0.1/50	
Reconstituted vegetables			0.1/5			50/200		200/400	0.1/50	
Seasonings/Flavors	20/2000		0.1/5	50/600		50000/100000	5/40	20000/250000	0.1/50	0.1/0.5
Snack foods		10/50	0.1/5	50/500	30/60	50/200	5/40	2000/5000	0.1/50	
Soft candy				50/300		50/200	40/80	200/600	0.1/50	0.1/0.5
Soups			0.1/5	50/300	20/50	50/200		1000/5000	0.1/200	0.1/0.5
Sugar substitutes				50/300		50/200		200/1000	0.1/10	
Sweet sauces				50/400		50/200	5/40	200/500	0.5/50	0.1/0.5



**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	2-(3,4-Dihydroxyphenyl)-5,7-dihydroxy-4-chromanone	N-[N-(3-(3-Hydroxy-4-methoxyphenyl)propyl)-L-alphaspertyl]-L-phenylalanine 1-methylester, monohydrate	Sweet blackberry leaves extract	2-[2-(p-Menthyloxy)ethoxy]ethanol	Succinic acid	Rebaudioside C	1-(2-Hydroxyphenyl)-3-(pyridin-4-yl)propan-1-one	1-(2-Hydroxy-4-isobutoxyphenyl)-3-(pyridin-2-yl)propan-1-one	1-(2-Hydroxy-4-methoxyphenyl)-3-(pyridin-2-yl)propane-1-one	trans-4-tert-Butyl cyclohexanol
Category	4715	4716	4717	4718	4719	4720	4721	4722	4723	4724
Baked goods	20/100				60/200			1/2	2/25	
Beverages (Non-alcoholic)	20/150	1/2	330/425	1/10	30/100	100/250	5/35			20/50
Beverages (Alcoholic)	20/100			1/10	60/200					20/50
Breakfast cereal	20/100		330/425		60/200	200/400	5/35			
Cheese					60/200				5/25	
Chewing gum	50/250	40/50	330/425	10/100	60/200	1000/1000				
Condiments/Relishes				1/10	60/200			2/5	2/25	20/100
Confectionery frostings	20/100			10/100	60/200					50/200
Egg products					60/200					
Fats/Oils				0.5/5	60/200					20/100
Fish products					60/200			2/5	2/2	
Frozen dairy	20/100	0.9/1	330/425	1/10	60/200		5/30			
Fruit ices			330/425	1/10	60/200					
Gelatins/Puddings	20/100			0.5/5	60/200					
Granulated Sugar					60/200					
Gravies				0.5/5	60/200			5/30	5/25	20/100
Hard candy	20/100			1/10	60/200					20/100
Imitation dairy	20/100				60/200				5/25	
Instant coffee/tea	20/100		330/425	0.1/1	60/200					20/50
Jams/Jellies				1/10	60/200	50/300				
Meat products					60/200			5/20	5/25	20/100
Milk products	20/100	0.9/1	330/425		60/200		5/35			
Nut products					60/200					
Other grains					60/200					
Poultry					60/200			5/20	5/5	
Processed fruits					60/200					20/50
Processed vegetables					60/200					
Reconstituted vegetables					60/200					
Seasonings/Flavors	50/200			1000/10000	100/1000			5/10	5/50	20/100
Snack foods	20/100			1/10	60/200			5/10	5/25	20/100
Soft candy				1/10	60/200					20/100
Soups	20/100			1/10	60/200			5/20		
Sugar substitutes	20/100		330/425	0.05/0.5	100/1000				5/25	20/100
Sweet sauces	20/100			5/50	60/200					

**Table 2 (continued) – Average usual use levels (ppm)/average maximum use levels (ppm) for new FEMA GRAS Flavoring Substances**

	3-(1-((3,5-Dimethylisoxazol-4-yl)methyl)-1H-pyrazol-4-yl)-1-(3-hydroxybenzyl)imidazolidine-2,4-dione	3-(1-((3,5-Dimethylisoxazol-4-yl)methyl)-1H-pyrazol-4-yl)-1-(3-hydroxybenzyl)-5,5-dimethylimidazolidine-2,4-dione	Clover herb distillate
Category	4725	4726	4727
Baked goods			0.5/2
Beverages (Non-alcoholic)	2/10	2/10	0.3/0.8
Beverages (Alcoholic)			0.5/2
Breakfast cereal	20/60	20/60	0.5/2
Cheese			
Chewing gum	300/1200	300/1200	
Condiments/Relishes	20/60	20/60	
Confectionery frostings	20/60	20/60	0.5/2
Egg products			
Fats/Oils			
Fish products			
Frozen dairy	20/60	20/60	0.4/2
Fruit ices	20/60	20/60	
Gelatins/Puddings	20/60	20/60	0.4/2
Granulated Sugar			
Gravies			
Hard candy	75/300	75/300	
Imitation dairy	2/10	2/10	0.4/1.6
Instant coffee/tea	2/10	2/10	0.3/1
Jams/Jellies			0.4/1
Meat products			
Milk products	2/10	2/10	0.4/1.6
Nut products			0.4/1.6
Other grains			
Poultry			
Processed fruits			
Processed vegetables			
Reconstituted vegetables	20/60	20/60	
Seasonings/Flavors	25/100	25/100	0.2/1
Snack foods	20/60	20/60	0.5/2
Soft candy	75/300	75/300	0.6/2
Soups	2/10	2/10	
Sugar substitutes	2/20	2/20	
Sweet sauces			0.3/0.8

**Table 3 – Updated average usual use levels (ppm)/average maximum use levels (ppm) for flavoring substances previously recognized as FEMA GRAS. Superscript ‘a’ represents a new use level.**

	Capiscum oleoresin	Sodium acetate	L-Glutamic acid	Glycine	Ethyl-2-isopropyl-5-methylcyclohexane-carboxamide	Vanillyl butyl ether
<b>FEMA No.</b>	<b>2234</b>	<b>3024</b>	<b>3285</b>	<b>3287</b>	<b>3455</b>	<b>3796</b>
<b>GRAS Publication</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>9</b>	<b>16</b>
<b>Category</b>						
Baked goods	50/85	15/15	1400 <sup>a</sup> /3000 <sup>a</sup>	50/150		5/20
Beverages (Non-alcoholic)	90/105	1.5/1.5	400/600 <sup>a</sup>	250 <sup>a</sup> /1000	10/10	8 <sup>a</sup> /20 <sup>a</sup>
Beverages (Alcoholic)	800/900	1.5/1.5	60 <sup>a</sup> /600 <sup>a</sup>		10/10	30 <sup>a</sup> /80 <sup>a</sup>
Breakfast cereal	25 <sup>a</sup> /50 <sup>a</sup>	0.01/60	600 <sup>a</sup> /3000 <sup>a</sup>			60 <sup>a</sup> /100 <sup>a</sup>
Cheese			1400 <sup>a</sup> /3000 <sup>a</sup>			100 <sup>a</sup> /200 <sup>a</sup>
Chewing gum	450 <sup>a</sup> /500 <sup>a</sup>		100 <sup>a</sup> /500 <sup>a</sup>		1400 <sup>a</sup> /2000 <sup>a</sup>	3500 <sup>a</sup> /4200 <sup>a</sup>
Condiments/Relishes	250/330		2000 <sup>a</sup> /5000 <sup>a</sup>	150/150		40 <sup>a</sup> /75 <sup>a</sup>
Confectionery frostings	20 <sup>a</sup> /50 <sup>a</sup>		300 <sup>a</sup> /500 <sup>a</sup>		10/10	70 <sup>a</sup> /100 <sup>a</sup>
Egg products			1000 <sup>a</sup> /2000 <sup>a</sup>			5/10
Fats/Oils	100 <sup>a</sup> /125 <sup>a</sup>	1/5	200 <sup>a</sup> /600 <sup>a</sup>			200 <sup>a</sup> /300 <sup>a</sup>
Fish products			1000 <sup>a</sup> /2500 <sup>a</sup>			200 <sup>a</sup> /250 <sup>a</sup>
Frozen dairy	25 <sup>a</sup> /28 <sup>a</sup>	15/15	1400 <sup>a</sup> /3000		10/10	100 <sup>a</sup> /150 <sup>a</sup>
Fruit ices		15/15	200 <sup>a</sup> /600 <sup>a</sup>		10/10	35 <sup>a</sup> /50 <sup>a</sup>
Gelatins/Puddings	18/20		200 <sup>a</sup> /500 <sup>a</sup>		10/10	70 <sup>a</sup> /100 <sup>a</sup>
Granulated sugar						50 <sup>a</sup> /100 <sup>a</sup>
Gravies	49/50 <sup>a</sup>		1400 <sup>a</sup> /3000 <sup>a</sup>			10 <sup>a</sup> /20 <sup>a</sup>
Hard candy	100 <sup>a</sup> /150 <sup>a</sup>	200/200	200 <sup>a</sup> /600 <sup>a</sup>	25/150	100/150 <sup>a</sup>	400 <sup>a</sup> /700 <sup>a</sup>
Imitation dairy	15 <sup>a</sup> /25 <sup>a</sup>		1400 <sup>a</sup> /3000 <sup>a</sup>			90 <sup>a</sup> /110 <sup>a</sup>
Instant coffee/Tea	10 <sup>a</sup> /15 <sup>a</sup>		300 <sup>a</sup> /600 <sup>a</sup>			15 <sup>a</sup> /30 <sup>a</sup>
Jams/Jellies	15 <sup>a</sup> /25 <sup>a</sup>	0.32/0.32	300 <sup>a</sup> /500 <sup>a</sup>	50/150	10/10	35 <sup>a</sup> /50 <sup>a</sup>
Meat products	75/145	1500 <sup>a</sup> /2500 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>	150/150		10 <sup>a</sup> /20 <sup>a</sup>
Milk products	15 <sup>a</sup> /25 <sup>a</sup>		1400 <sup>a</sup> /3000 <sup>a</sup>			25 <sup>a</sup> /50 <sup>a</sup>
Nut products	50 <sup>a</sup> /100 <sup>a</sup>	15000 <sup>a</sup> /30000 <sup>a</sup>	300 <sup>a</sup> /1000 <sup>a</sup>			200 <sup>a</sup> /500 <sup>a</sup>
Other grains	25 <sup>a</sup> /40 <sup>a</sup>	6/6	300 <sup>a</sup> /2000 <sup>a</sup>			60 <sup>a</sup> /100 <sup>a</sup>
Poultry			1000 <sup>a</sup> /2000 <sup>a</sup>			100 <sup>a</sup> /250 <sup>a</sup>
Processed fruits	15 <sup>a</sup> /50 <sup>a</sup>		60 <sup>a</sup> /300 <sup>a</sup>			5 <sup>a</sup> /25 <sup>a</sup>
Processed vegetables	20 <sup>a</sup> /25 <sup>a</sup>		300 <sup>a</sup> /500 <sup>a</sup>			5/25 <sup>a</sup>
Reconstituted vegetables			200 <sup>a</sup> /400 <sup>a</sup>			5/10
Seasonings/Flavors	100 <sup>a</sup> /200 <sup>a</sup>	1500 <sup>a</sup> /3000 <sup>a</sup>	20000 <sup>a</sup> /250000 <sup>a</sup>			10 <sup>a</sup> /20 <sup>a</sup>
Snack foods	50 <sup>a</sup> /100 <sup>a</sup>	15000/30000	2000 <sup>a</sup> /5000 <sup>a</sup>		66 <sup>a</sup> /100 <sup>a</sup>	25 <sup>a</sup> /65
Soft candy	100 <sup>a</sup> /200 <sup>a</sup>	0.88/0.9	200 <sup>a</sup> /600 <sup>a</sup>	25/150		400 <sup>a</sup> /500 <sup>a</sup>
Soups	25 <sup>a</sup> /50 <sup>a</sup>	0.1/0.5	1000 <sup>a</sup> /5000 <sup>a</sup>	150/150		30 <sup>a</sup> /45 <sup>a</sup>
Sugar substitutes			200 <sup>a</sup> /1000 <sup>a</sup>			40 <sup>a</sup> /55 <sup>a</sup>
Sweet sauces	50 <sup>a</sup> /75 <sup>a</sup>		200 <sup>a</sup> /500 <sup>a</sup>			65 <sup>a</sup> /80 <sup>a</sup>

**Table 3 – Updated average usual use levels (ppm)/average maximum use levels (ppm) for flavoring substances previously recognized as FEMA GRAS. Superscript ‘a’ represents a new use level.**

	Neohesperidine dihydrochalcone	L-Alanine	L-Arginine	L-Lysine	Sodium diacetate	p-Menthane-3,8- diol
<b>FEMA No.</b>	<b>3811</b>	<b>3818</b>	<b>3819</b>	<b>3847</b>	<b>3900</b>	<b>4053</b>
<b>GRAS Publication</b>	<b>17</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>21</b>
<b>Category</b>						
Baked goods	5 <sup>a</sup> /20 <sup>a</sup>	75/375	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		100 <sup>a</sup> /120 <sup>a</sup>
Beverages (Non-alcoholic)	5/15 <sup>a</sup>	400 <sup>a</sup> /500 <sup>a</sup>	60 <sup>a</sup> /600 <sup>a</sup>	60 <sup>a</sup> /600 <sup>a</sup>		48 <sup>a</sup> /50 <sup>a</sup>
Beverages (Alcoholic)	5/15 <sup>a</sup>	50/150	60 <sup>a</sup> /600 <sup>a</sup>	60 <sup>a</sup> /600 <sup>a</sup>		40 <sup>a</sup> /50 <sup>a</sup>
Breakfast cereal	8 <sup>a</sup> /20 <sup>a</sup>	50/150	600 <sup>a</sup> /3000 <sup>a</sup>	600 <sup>a</sup> /3000 <sup>a</sup>		20 <sup>a</sup> /50 <sup>a</sup>
Cheese	3/4	10/20	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		50 <sup>a</sup> /75 <sup>a</sup>
Chewing gum	200/300 <sup>a</sup>	5/10	100 <sup>a</sup> /500 <sup>a</sup>	100 <sup>a</sup> /500 <sup>a</sup>		1500 <sup>a</sup> / 2000 <sup>a</sup>
Condiments/Relishes	2/3	20/100	2000 <sup>a</sup> /5000 <sup>a</sup>	2000 <sup>a</sup> /5000 <sup>a</sup>		50 <sup>a</sup> /100 <sup>a</sup>
Confectionery frostings	3/3	25/100	300 <sup>a</sup> /500 <sup>a</sup>	300 <sup>a</sup> /500 <sup>a</sup>		200 <sup>a</sup> /350 <sup>a</sup>
Egg products	2/3	50/250	1000 <sup>a</sup> /2000 <sup>a</sup>	1000 <sup>a</sup> /2000 <sup>a</sup>		
Fats/Oils	4/4	10/30	200 <sup>a</sup> /600 <sup>a</sup>	200 <sup>a</sup> /600 <sup>a</sup>		100 <sup>a</sup> /500 <sup>a</sup>
Fish products	2/3	50/250	1000 <sup>a</sup> /2500 <sup>a</sup>	1000 <sup>a</sup> /2500 <sup>a</sup>		
Frozen dairy	2/8 <sup>a</sup>	60/200	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		5/25
Fruit ices	2 <sup>a</sup> /3 <sup>a</sup>	10/20	200 <sup>a</sup> /600 <sup>a</sup>	200 <sup>a</sup> /600 <sup>a</sup>		5/25
Gelatins/Puddings	3/3 <sup>a</sup>	50/150	200 <sup>a</sup> /500 <sup>a</sup>	200 <sup>a</sup> /500 <sup>a</sup>		150 <sup>a</sup> /200 <sup>a</sup>
Granulated sugar		5/10	1/20	5/25		5 <sup>a</sup> /25 <sup>a</sup>
Gravies	3/4	200/1000	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		35 <sup>a</sup> /40 <sup>a</sup>
Hard candy	5/15	50/200	200 <sup>a</sup> /600 <sup>a</sup>	200 <sup>a</sup> /600 <sup>a</sup>		500 <sup>a</sup> /800 <sup>a</sup>
Imitation dairy	3/10 <sup>a</sup>	50/150	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		75 <sup>a</sup> /100 <sup>a</sup>
Instant coffee/Tea	3 <sup>a</sup> /6 <sup>a</sup>	100/500	300 <sup>a</sup> /600 <sup>a</sup>	300 <sup>a</sup> /600 <sup>a</sup>		25 <sup>a</sup> /50 <sup>a</sup>
Jams/Jellies	2/3	5/10	300 <sup>a</sup> /500 <sup>a</sup>	300 <sup>a</sup> /500 <sup>a</sup>		150 <sup>a</sup> /175
Meat products	2/3	100/500	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>	1500 <sup>a</sup> / 2500 <sup>a</sup>	
Milk products	3/10 <sup>a</sup>	50/150	1400 <sup>a</sup> /3000 <sup>a</sup>	1400 <sup>a</sup> /3000 <sup>a</sup>		75 <sup>a</sup> /100 <sup>a</sup>
Nut products	3/4	75/225	300 <sup>a</sup> /1000 <sup>a</sup>	300 <sup>a</sup> /1000 <sup>a</sup>	15000/ 30000	15 <sup>a</sup> /50
Other grains	3/4	10/20	300 <sup>a</sup> /2000 <sup>a</sup>	300 <sup>a</sup> /2000 <sup>a</sup>		
Poultry	2/3	100/500	1000 <sup>a</sup> /2000 <sup>a</sup>	1000 <sup>a</sup> /2000 <sup>a</sup>	1500 <sup>a</sup> / 2500 <sup>a</sup>	
Processed fruits	2/3	10/30	60 <sup>a</sup> /300 <sup>a</sup>	60 <sup>a</sup> /300 <sup>a</sup>		20 <sup>a</sup> /150 <sup>a</sup>
Processed vegetables	2/3	5/10	300 <sup>a</sup> /500 <sup>a</sup>	300 <sup>a</sup> /500 <sup>a</sup>		20 <sup>a</sup> /75 <sup>a</sup>
Reconstituted vegetables	2/3	5/10	200 <sup>a</sup> /400 <sup>a</sup>	200 <sup>a</sup> /400 <sup>a</sup>		20 <sup>a</sup> /25 <sup>a</sup>
Seasonings/Flavors	3/4	2000/4000	20000 <sup>a</sup> /250000 <sup>a</sup>	20000 <sup>a</sup> /250000 <sup>a</sup>	15000 <sup>a</sup> / 30000 <sup>a</sup>	15 <sup>a</sup> /30 <sup>a</sup>
Snack foods	3/3	100/200	2000 <sup>a</sup> /5000 <sup>a</sup>	2000 <sup>a</sup> /5000 <sup>a</sup>	15000/ 30000	15 <sup>a</sup> /30 <sup>a</sup>
Soft candy	4 <sup>a</sup> /10 <sup>a</sup>	25/100	200 <sup>a</sup> /600 <sup>a</sup>	200 <sup>a</sup> /600 <sup>a</sup>		500 <sup>a</sup> /750 <sup>a</sup>
Soups	5/10	100/500	1000 <sup>a</sup> /5000 <sup>a</sup>	1000 <sup>a</sup> /5000 <sup>a</sup>		15 <sup>a</sup> /25 <sup>a</sup>
Sugar substitutes	4/4	10/20	200 <sup>a</sup> /1000 <sup>a</sup>	200 <sup>a</sup> /1000 <sup>a</sup>		
Sweet sauces	2/3	25/100	200 <sup>a</sup> /500 <sup>a</sup>	200 <sup>a</sup> /500 <sup>a</sup>		25 <sup>a</sup> /300 <sup>a</sup>

**Table 3 – Updated average usual use levels (ppm)/average maximum use levels (ppm) for flavoring substances previously recognized as FEMA GRAS. Superscript ‘a’ represents a new use level.**

	<b><i>N</i>1-(2,4-Dimethoxybenzyl)-<i>N</i>2-(2-(pyridin-2-yl)ethyl)oxalamide</b>	<b><i>gamma</i>-Octadecalactone</b>	<b><i>delta</i>-Octadecalactone</b>
<b>FEMA No.</b>	<b>4233</b>	<b>4446</b>	<b>4447</b>
<b>GRAS Publication</b>	<b>22</b>	<b>24</b>	<b>24</b>
<b>Category</b>			
Baked goods	1/2	5/20 <sup>a</sup>	0.5/10 <sup>a</sup>
Beverages (Non-alcoholic)	1 <sup>a</sup> /2 <sup>a</sup>	1 <sup>a</sup> /10 <sup>a</sup>	0.1/1
Beverages (Alcoholic)			0.1/1
Breakfast cereal	5 <sup>a</sup> /10 <sup>a</sup>		
Cheese	1/3	5/10	
Chewing gum			0.5/3
Condiments/Relishes	2/4		
Confectionery frostings			
Egg products	1 <sup>a</sup> /2 <sup>a</sup>		
Fats/Oils	2/4	5/10	
Fish products	1/3		
Frozen dairy		5 <sup>a</sup> /20 <sup>a</sup>	0.1/10 <sup>a</sup>
Fruit ices			
Gelatins/Puddings			
Granulated sugar			
Gravies	2/4		0.1/3
Hard candy			
Imitation dairy			
Instant coffee/Tea			
Jams/Jellies			
Meat products	1/3		
Milk products		5/10	0.1/10 <sup>a</sup>
Nut products	1 <sup>a</sup> /2 <sup>a</sup>		
Other grains	1 <sup>a</sup> /2 <sup>a</sup>		
Poultry	1/3		
Processed fruits			
Processed vegetables	1/3		
Reconstituted vegetables	1 <sup>a</sup> /2 <sup>a</sup>		
Seasonings/Flavors	5/10		
Snack foods	5/10	5/20	2 <sup>a</sup> /20 <sup>a</sup>
Soft candy			
Soups	2/4		0.1/1
Sugar substitutes			
Sweet sauces			