

Annex I

Overview: Categorisation of food colours*



Colour category	Definition of colour category	Example Colours	Conceptual option for voluntary marketing claims*
N	Umbrella category for colours in category N1 – N3	For detailed breakdown of this umbrella colour category see colour categories N1-N3	See N1-N3
N1	A colour that is derived from plant, animal, mineral or microbiological source through traditional processing and/or appropriate physical processing. The process does not modify the chemical nature of the colouring principle.	<p>E 100 Curcumin</p> <p>E 101 (i) Riboflavin by fermentation</p> <p>E 120 Cochineal, only Carminic Acid</p> <p>E 140 (i) Chlorophylls</p> <p>E 150a** Plain caramel</p> <p>E 153 Vegetable carbon***</p> <p>E 160a (ii) Plant Carotenes</p> <p>E 160a(iii) Beta-carotene from <i>Blakeslea trispora</i></p> <p>E 160(iv) Algal Carotenes</p> <p>E 160b (i) Annatto, Bixin fraction only</p> <p>E 160b (iii) Annatto, oil extracted, i.e. Bixin</p> <p>E 160c Paprika extract</p> <p>E 160d (ii) Lycopene from Red Tomatoes</p> <p>E 160 d(iii) Lycopene from <i>Blakeslea trispora</i></p> <p>E 161b Lutein (esterified lutein fraction)</p> <p>E 162 Beetroot Red</p> <p>E 163 Anthocyanins</p> <p>E 170 Calcium carbonate from Limestone</p>	<p>Non-artificial colour</p> <p>Natural origin colour</p> <p>Natural colour</p>
N2	A colour that is derived from plant, animal, mineral or microbiological source through traditional processing and/or appropriate physical and chemical processing. The process does not modify the chemical nature of the chromophore of the colour, however intentionally renders the colouring principle more suitable for use in targeted food applications.	<p>E 101 (ii) Riboflavin-5'- phosphate****</p> <p>E 140 (ii) Chlorophyllins</p> <p>E 141 (i) Copper complexes of chlorophylls</p> <p>E 141(ii) Copper complexes of Chlorophyllins</p> <p>E 150b Caustic sulphite caramel*****</p> <p>E 150c Ammonia caramel*****</p> <p>E 150d Sulphite ammonia caramel*****</p> <p>E 160b (ii) Annatto, alkali extract (Norbixin)</p> <p>E 160b (i) Annatto, Norbixin fraction</p> <p>E 120 Carmines, Carminic acid aluminium lake</p> <p>E 161b Lutein, free lutein after saponification</p>	<p>Non-artificial colour</p> <p>Nature derived colour</p>
N3	A colour identical with a colouring principle that occurs in nature and which is produced by chemical synthesis.	<p>E 160a (i) Beta-carotene</p> <p>E 160d (i) Lycopene</p> <p>E 160e Beta-apo-8'-carotenal</p> <p>E 161g Canthaxanthin</p> <p>E 170 Calcium carbonate by precipitation</p> <p>E 171 Titanium dioxide</p> <p>E 172 Iron oxide</p> <p>E 173 Aluminium</p> <p>E 174 Silver</p> <p>E 175 Gold</p>	<p>Non-artificial colour</p> <p>Nature-identical colour</p>

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Colour category	Definition of colour category	Example Colours	Conceptual option for voluntary marketing claims*
A	Artificial colour: a colour produced by chemical synthesis, and not found in nature and not chemically derived from a natural starting material	E 102 Tartrazine E 104 Quinoline Yellow E 110 Sunset Yellow E 122 Azorubine E 123 Amaranth E 124 Ponceau 4R, E 127 Erythrosine E 129 Allura Red AC E 131 Patent Blue E 132 Indigotine E 133 Brilliant Blue FCF E 142 Green S E 151 Brilliant Black BN E 155 Brown HT E 180 Litholrubine BK	None

* This overview has been produced with the aim of providing informal guidance. It must be read in conjunction with the entire NATCOL position and with the relevant legislation. The guidance given here is not a substitute for legal advice nor is it an authoritative interpretation of the law. It does not relieve NATCOL members or any other persons of their obligations under the applicable laws. The legality of the use of voluntary label claims requires a case by case assessment.

** The colour E 150a is formed by controlled heat treatment of carbohydrates. It does not meet the second part of the technical definition for the colour category N1 as the caramel colour substances are not present in the starting material already but formed during processing. However, for the purpose of outlining labelling options, category N1 is the colour category E 150a fits into.

*** The colour E 153 is formed by carbonization (heating process) of a vegetable starting material. It does not meet the second part of the technical definition for the colour category N1 as the carbon colour is not present in the starting material already but formed during processing. However, for the purpose of outlining labelling options, category N1 is the colour category that E 153 fits into.

**** The riboflavin molecule is produced by fermentation; however the phosphorylation of the riboflavin is achieved by a chemical process after the fermentation.

***** The colours E 150b-d are formed upon heat treatment of carbohydrates under certain conditions involving the addition of sulphite compounds and/or ammonia containing compounds. They do not meet the second part of the technical definition for the colours in category N2 as the caramel colour substances are not present in the starting material but formed during processing. However, for the purpose of outlining labelling options, category N2 is the colour category that E 150b-d fit into.

Annex II-A: Guidance Voluntary Labelling



Food Colours

Key discriminators of equal importance:

1: Does the colour occur in nature?

2: Is the 'colouring principle' sourced from a naturally occurring starting material or derived therefrom?

YES

to either
or both
questions

NO

to both
questions

Colour category N:

Colour category A:
Artificial colours

**Traditional / appropriate
physical processing**

Colour category N1

A colour that is derived from plant, animal, mineral or microbiological source through traditional processing and/or appropriate physical processing.

The process does not modify the chemical nature of the colouring principle.

**Traditional / appropriate
physical and chemical
processing**

Colour category N2:

A colour that is derived from plant, animal, mineral or microbiological source through traditional processing and/or appropriate physical and chemical processing.

The process does not modify the chemical nature of the chromophore of the colour, however intentionally renders the colouring principle more suitable for use in targeted food applications.

Chemical synthesis

Colour category N3:

A colour identical with a colouring principle that occurs in nature and which is produced by chemical synthesis.

Annex II-B:

Guidance Voluntary Labelling

or Conceptual options for voluntary marketing claims



Food Colours

Key discriminators of equal importance:

1: Does the colour occur in nature?

2: Is the 'colouring principle' sourced from a naturally occurring starting material or derived therefrom?

YES

to either
or both
questions

NO

to both
questions

Colour category N:

Colour category A:
Artificial colours

Traditional / appropriate
physical processing

Colour category N1:
Non-artificial colour
Natural colour/ Natural
origin colour

Traditional / appropriate
physical and chemical
processing

Colour category N2:
Non-artificial colour
Nature derived colour

Chemical synthesis

Colour category N3:
Non-artificial colour
Nature-identical colour

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Conceptual options for
voluntary marketing claims