1973. No. 466 [C]

FOOD AND DRUGS

Composition and Labelling

Colouring Matter in Food

REGULATIONS, DATED 16TH NOVEMBER 1973, MADE BY THE MINISTRY OF HEALTH AND SOCIAL SERVICES UNDER SECTIONS 4, 7 AND 68 OF THE FOOD AND DRUGS ACT (NORTHERN IRELAND) 1958.

The Ministry of Health and Social Services, on behalf of the Secretary of State and in exercise of the powers conferred upon it by sections 4, 7 and 68 of the Food and Drugs Act (Northern Ireland) 1958(a), having consulted with such organisations as appear to it to be representative of interests substantially affected by these regulations, hereby makes the following regulations:—

Citation and commencement

1. These regulations may be cited as the Colouring Matter in Food Regulations (Northern Ireland) 1973, and shall come into operation as respects regulations 13 and 15(2) on 17th December 1973 and as respects the remainder on 1st July 1974.

Interpretation

2.—(1) In these regulations—

"the Act" means the Food and Drugs Act (Northern Ireland) 1958;

"appropriate designation" means, as respects any permitted colouring matter or permitted diluent, a name or description or a name and description sufficiently specific, in each case, to indicate to an intending purchaser the true nature of the permitted colouring matter or permitted diluent to which it is applied;

"coffee" means the decorticated berries of coffee and includes any such berries which have been roasted or ground or roasted and ground;

"coffee product" means any dried or liquid extract of coffee, any coffee and chicory mixture, any dried or liquid extract of a coffee and chicory mixture, any coffee and fig mixture, or any dried or liquid extract of a coffee and fig mixture;

"container" includes any form of packaging of food for sale as a single item, whether by way of wholly or partly enclosing the food or by way of attaching the food to some other article, and in particular includes a wrapper or confining band;

"diluent" means any substance used to dilute or dissolve colouring matter intended for use in food for human consumption;

"district council" has the meaning assigned to it in section 1 of the Local Government Act (Northern Ireland) 1972(b);

"food" means food intended for sale for human consumption and includes drink, chewing gum and other products of a like nature and use, and articles and substances used as ingredients in the preparation of food or drink or of such products, but does not include—

(a) 1958. c. 27. (b) 1972. c. 9 (N.I.).

(*a*) water, live animals or birds,

(*b*) fodder or feeding stuffs for animals, birds or fish, or

(*c*) articles or substances used only as drugs;

"human consumption" includes use in the preparation of food for human consumption;

"permitted colouring matter" means any colouring matter described in the table in, or paragraph 1 of, Part I of Schedule 1 which complies with any specific purity criteria relating to that colouring matter specified in Part II of that Schedule and, so far as is not otherwise provided by any such specific purity criteria, with the general purity criteria specified in Part III of that Schedule, or any combination of two or more such colouring matters and (except in the definition of appropriate designation in this regulation, regulation 6 and Schedules 1 and 4) shall be construed as including any permitted diluent combined with such colouring matter or combination of such colouring matters;

"permitted diluent" means any diluent described in Part I of Schedule 2 which complies with the general purity criteria specified in Part II of that Schedule or any permitted solvent which complies with the purity criteria specified in Part III of that Schedule and includes any combination of two or more such diluents or solvents or diluents and solvents;

"permitted solvent" has the meaning assigned to it by the Solvents in Food Regulations (Northern Ireland) 1967(c);

"processed" in relation to any food, includes curing by smoking and any treatment or process resulting in a substantial change in the natural state of any food but does not include boning, paring, grinding, cutting, cleaning or trimming and "unprocessed" shall be construed accordingly;

"sell" includes offer or expose for sale or have in possession for sale;

"vegetables" includes pulses.

(2) Unless a contrary intention is expressed, all proportions mentioned in these regulations are proportions calculated by weight of the product as sold.

(3) All proportions and quantities of any colouring matter mentioned in these regulations are calculated on the pure colouring matter.

(4) Any reference in these regulations to a label borne on a container shall be construed as including a reference to any legible marking on the container however effected.

(5) For the purposes of these regulations, the supply of food, otherwise than by sale, at, in or from any place where food is supplied in the course of a business shall be deemed to be a sale of that food.

Exemptions

3. The provisions of these regulations shall not apply to any food having any colouring matter in it or on it, to any colouring matter or to any diluent combined with any colouring matter or colouring matters which, in each case, is intended at the time of sale, consignment or delivery as the case may be,—

(*a*) for exportation to any place outside the United Kingdom; or

(*b*) for the purpose of scientific laboratory testing, if the container of any such food, colouring matter or diluent bears a label stating clearly that such food, colouring matter or diluent, as the case may be, is sold, consigned or delivered, as the case may be, only for such purpose.

(c) S.R. & O. (N.I.) 1967, No. 282.

Sale, etc. of food containing colouring matter

4.—(1) Subject to paragraph (3), no food sold, consigned or delivered shall have in it or on it any colouring matter other than a permitted colouring matter.

(2) Subject to paragraph (3), no food sold, consigned or delivered shall have in it or on it any mark, however effected, in any colouring matter other than a permitted colouring matter.

(3) Save as hereinafter provided, no food sold, consigned or delivered shall have in it or on it any permitted colouring matter specified in column 2 of Schedule 3:

Provided that any food specified in column 1 of that Schedule may have in it or on it any such permitted colouring matter specified in relation thereto in column 2 subject to any restriction on use specified in relation thereto in column 3.

(4) No person shall sell, consign, deliver or have in his possession, any food which does not comply with this regulation.

Prohibition of the use of added colouring matter

5.—(1) Save as hereinafter provided, no meat, game, poultry, fish, fruit or vegetable, in a raw or unprocessed state, sold, consigned or delivered for human consumption, shall have in it or on it (otherwise than for the purpose of marking) any colouring matter:

Provided that the husk containing any nut may have in it or on it added permitted colouring matter.

(2) No tea (whether in leaf or essence form), coffee, coffee product, condensed milk or dried milk, sold, consigned or delivered for human consumption shall have in it or on it any added colouring matter.

(3) No person shall sell, consign, deliver or have in his possession any food which does not comply with this regulation.

Inorganic and organic impurity limits for colouring matters and diluents

6.—(1) No permitted colouring matter sold, consigned or delivered for use as an ingredient in the preparation of food and no permitted diluent combined with any such permitted colouring matter shall contain any inorganic or organic impurity specified in Part II or Part III, as the case may be, of Schedule 1 in relation to such permitted colouring matter or in Part II or Part III, as the case may be, of Schedule 2 in relation to such permitted diluent in excess of the amount therein prescribed for such impurity:

Provided that the maximum amount of any inorganic or organic impurity that may be contained in a combination of permitted colouring matters or of a permitted colouring matter or permitted colouring matters with a permitted diluent or permitted diluents shall be determined by multiplying the maximum amount of that impurity specified in Part II or Part III of Schedule 1 in relation to each permitted colouring matter or in Part II or Part III of Schedule 2 in relation to each permitted diluent, which in either case is contained in that combination, by the proportion of the total amount of such combination represented by that colouring matter or diluent and by adding together the products resulting therefrom.

(2) No person shall sell, consign, deliver or have in his possession any permitted colouring matter or permitted diluent combined with any permitted colouring matter which does not comply with this regulation.

Sale, advertisement and labelling of colouring matter

7.—(1) No person shall sell, consign, deliver, have in his possession or advertise for sale any colouring matter for use as an ingredient in the preparation of food unless such colouring matter is a permitted colouring matter.

(2) No person shall sell, consign or deliver any permitted colouring matter for use as an ingredient in the preparation of food except in a container bearing a label which complies with the requirements specified in Schedule 4.

Condemnation of food

8. Where any food is certified by a public analyst as being food which it is an offence against regulation 4 or 5 to sell, consign, deliver or possess, that food may be treated for the purposes of section 9 of the Act (under which food may be seized and destroyed on the order of a justice of the peace) as being unfit for human consumption.

Penalties and enforcement

9.—(1) If any person contravenes or fails to comply with any of the foregoing provisions he shall be guilty of an offence and shall be liable to a fine not exceeding one hundred pounds or to imprisonment for a term not exceeding three months, or to both, and, in the case of a continuing offence, to a further fine not exceeding five pounds for each day during which the offence continues after conviction.

(2) Each district council shall enforce and execute such provisions in its area.

(3) The requirements of section 47 of the Act (which requires notice to be given to the Ministry of Health and Social Services of intention to institute proceedings for an offence against any provisions of these regulations relating to the labelling, advertising or description of food) shall not apply as respects any proceedings instituted by a council for an offence against any such provisions of these regulations.

Defences

10.—(1) In any proceedings for an offence against these regulations in relation to the publication of an advertisement, it shall be a defence for the defendant to prove that, being a person whose business it is to publish or arrange for the publication of advertisements, he received the advertisement for publication in the ordinary course of business.

(2) In any proceedings against the manufacturer or importer of any colouring matter for use as an ingredient in the preparation of food, or of any food having colouring matter in or on it, for an offence against these regulations in relation to the publication of an advertsiement, it shall rest on the defendant to prove that he did not publish, and was not a party to the publication of, the advertisement.

Amendment of the Arsenic in Food Regulations (Northern Ireland) 1961

11. The Arsenic in Food Regulations (Northern Ireland) 1961(**d**) shall be further amended by deleting from the Schedule item 19 (which relates to Colourings other than synthetic colourings) and the words "but not including synthetic colourings" in the first column of items 12 and 20 (which relate respectively to Chemicals not otherwise specified and to Chemicals for which

(**d**) S.R. & O. (N.I.) 1961, No. 98.

an arsenic limit is specified in the British Pharmacopoeia or the British Pharmaceutical Codex).

Amendment of the Lead in Food Regulations (Northern Ireland) 1961

12. The Lead in Food Regulations (Northern Ireland) 1961(**e**), shall be further amended as follows:—

(*a*) by deleting from regulation 2(1) the definition of food colouring;

(*b*) by deleting from Part I of the Schedule the items relating to Caramel and to Food colourings (except caramel).

Amendment of the Preservatives in Food Regulations (Northern Ireland) 1962

13. The Preservatives in Food Regulations (Northern Ireland) 1962(**f**), shall be further amended as follows:—

(*a*) by substituting in column 1 of Schedule 1 for the words "Colouring matter, if in the form of a solution of a permitted colouring matter" the words "Colouring matter, except E 150 Caramel, if in the form of a solution of a permitted colouring matter";

(*b*) by inserting in Schedule 1 immediately after the item relating to Pectin, liquid the following item:—

"*Column 1* *Specified food*	*Column 2* *Permitted preservative*	*Column 3* *Parts per million not exceeding—*
E 150 Caramel	Sulphur Dioxide	1000".

Amendment of the Butter Regulations (Northern Ireland) 1966

14. The Butter Regulations (Northern Ireland) 1966(**g**), shall be amended by substituting in the definition of butter in regulation 2(1) for the words "salt, lactic acid cultures, annatto, carotene or turmeric" the words "annatto, alpha-, beta-, and gamma-carotene, synthetic beta-carotene or turmeric, inasmuch as their use is permitted by the Colouring Matter in Food Regulations (Northern Ireland) 1973, or salt or lactic acid cultures".

Revocations and transitional provisions

15.—(1) The Colouring Matter in Food Regulations (Northern Ireland) 1966(**h**) and the Colouring Matter in Food (Amendment) Regulations (Northern Ireland) 1970(**i**) are hereby revoked.

(2) Until revoked any provision of the Colouring Matter in Food Regulations (Northern Ireland) 1966, shall not apply to any sale, consignment, delivery or possession of any food having any colouring matter in it or on it, any colouring matter or any diluent combined with any colouring matter or colouring matters, or to any advertisement for sale which complies with a corresponding provision (if any) of these regulations.

Sealed with the Official Seal of the Ministry of Health and Social Services for Northern Ireland this 16th day of November 1973.

(L.S.)

G. Buchanan,
Assistant Secretary.

(**e**) S.R. & O. (N.I.) 1961, No. 208.
(**f**) S.R. & O. (N.I.) 1962, No. 173.
(**g**) S.R. & O. (N.I.) 1966, No. 205.
(**h**) S.R. & O. (N.I.) 1966, No. 243.
(**i**) S.R. & O. (N.I.) 1970, No. 208.

SCHEDULE 1 Regulations 2(1) and 6

PART I

Permitted colouring matter

Column 1 *Name of colour*	Column 2 *Serial number*	Column 3 *Colour index (1971) number*	Column 4 *Systematic name or description*
Curcumin	E 100	75300	1, 7-di-(4-hydroxy-3-methoxyphenyl) hepta-1, 6-diene-3,5-dione
Riboflavin or Lactoflavin	E 101	—	7,8-Dimethyl-10-(*D*-1-ribityl) isoalloxazine
Tartrazine	E 102	19140	*tri*Sodium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo) pyrazole-3-carboxylate
Quinoline Yellow	E 104	47005	Sodium salt of a mixture of the mono- and disulphonic acids (mainly the latter) of quinophthalone or 2-(2-quinolyl) indanedione
Fast Yellow AB	E 105	13015	*di*Sodium 2-amino-5-(4-sulphophenylazo) benzenesulphonate
Yellow 2G	—	18965	*di*Sodium 2,5-dichloro-4-[5-hydroxy-3-methyl-4-(4-sulphophenylazo) pyrazol-1-yl] benzenesulphonate
Sunset Yellow FCF or Orange Yellow S	E 110	15985	*di*Sodium 6-hydroxy-5-(4-sulphophenylazo) naphthalene-2-sulphonate
Orange G	—	16230	*di*Sodium 7-hydroxy-8-phenylazonaphthalene-1,3-disulphonate
Orange RN	—	15970	Sodium 6-hydroxy-5-phenylazonaphthalene-2-sulphonate
Cochineal or Carminic acid	E 120	75470	extract of *Coccus cacti* (Ammonium salts are included)

Column 1	Column 2	Column 3	Column 4
Name of colour	*Serial number*	*Colour index (1971) number*	*Systematic name or description*
Orchil or Orcein	E 121	—	extract obtained with ammonia solution, in air, or the red colouring matter of the species *Roccella, Lechanora* and *Orchella*
Carmoisine or Azorubine	E 122	14720	*di*Sodium 4-hydroxy-3-(4-sulpho-1-naphthylazo) naphthalene-1-sulphonate
Amaranth	E 123	16185	*tri*Sodium 3-hydroxy-4-(4-sulpho-1-naphthylazo) naphthalene-2,7-disulphonate
Ponceau 4R or Cochineal Red A	E 124	16255	*tri*Sodium 7-hydroxy-8-(4-sulpho-1-naphthylazo) naphthalene-1,3-disulphonate
Erythrosine BS	E 127	45430	*di*Sodium salt of 2,4,5,7-tetraiodofluorescein (xanthene numbering)
Red 2G	—	18050	*di*Sodium 5-acetamido-4-hydroxy-3-phenylazonaphthalene-2,7disulphonate
Solanthrene Blue RS or Anthragen Blue or Indanthrene Blue	E 130	69800	6,15-Dihydro-5,9,14,18-anthrazinetetrone (Indanthrone)
Patent Blue V	E 131	42051	Calcium di- 4-[4-diethylammoniocyclohexa-2,5-dienylidene-(4-diethylaminophenyl) methyl]-6-hydroxybenzene-1,3-disulphonate
Indigo Carmine or Indigotine	E 132	73015	*di*Sodium 5,5′-indigotindisulphonate
Brilliant Blue FCF	—	42090	*di*Sodium 4′,4″-di-(*N*-ethyl-3-sulphonatobenzylamino) triphenylmethylium-2-sulphonate

Column 1 *Name of colour*	Column 2 *Serial number*	Column 3 *Colour index (1971) number*	Column 4 *Systematic name or description*
Chlorophyll	E 140	75810	*Chlorophyll* a: Phytyl 4-ethyl-10-methoxycarbonyl-1, 3, 5, 8-tetramethyl-9-oxo-2-vinylphorbin-7-propionate, magnesium complex *Chlorophyll b*: Phytyl 4-ethyl-3-formyl-10-methoxycarbonyl-1,5,8-trimethyl-9-oxo-2-vinylphorbin-7-propionate, magnesium complex
Copper complexes of chlorophyll and chlorophyllins	E 141	75810	Copper chlorophyll complex and copper chlorophyllin complex
Green S or Acid Brilliant Green BS or Lissamine Green	E 142	44090	*mono*Sodium 4-[4-dimethylammoniocyclohexa-2, 5-dienylidene-(4-dimethylaminophenyl)methyl]-3-hydroxynaphthalene-2,7-disulphonate
Brown FK	—	—	mixture of the following components: (I) Sodium 2′,4″-diaminoazobenzene-4-sulphonate (II) Sodium 2′,4″-diamino-5′-methyl azobenzene-4-sulphonate (III) *di*Sodium 4,4′-(4,6-diamino-1,3-phenylenebisazo)dibenzenesulphonate (IV) *di*Sodium 4,4′-(2,4-diamino-1,3-phenylenebisazo) dibenzenesulphonate (V) *di*Sodium 4,4′-(2,4-diamino-5-methyl-1, 3-phenylenebisazo) dibenzenesulphonate (VI) *tri*Sodium 4,4′,4″-(2,4-diaminobenzene-1,3,5-triazo)tribenzenesulphonate
Chocolate Brown FB	—	—	the product of coupling diazotised naphthionic acid with osage orange extract (principally a mixture of maclurin (CI 75240) and morin (CI 75660)

Column 1	Column 2	Column 3	Column 4
Name of colour	*Serial number*	*Colour index (1971) number*	*Systematic name or description*
Chocolate Brown HT	—	20285	*di*Sodium 4,4′(2,4-dihydroxy-5-hydroxymethyl-1, 3-phenylenebisazo)di(naphthalene-1-sulphonate)
Caramel	E 150	—	products obtained exclusively by heating sucrose or other edible sugars; or water-soluble amorphous brown products, obtained by the controlled action of heat on edible sugars in the presence of one or more of the following chemical compounds: —acetic acid, citric acid, phosphoric acid, sulphuric acid, sulphurous acid or sulphur dioxide; —ammonium-, sodium-, potassium hydroxides or gaseous ammonia; —ammonium-, sodium-, potassium carbonates, phosphates, sulphates or sulphites
Black PN or Brilliant Black BN	E 151	28440	*tetra*Sodium 4-acetamido-5-hydroxy-6-[7-sulpho-4-(4-sulphophenylazo)-1-naphthylazo]naphthalene-1,7-disulphonate
Black 7984	E 152	27755	*tetra*Sodium 6-amino-4-hydroxy-3-[7-sulpho-4-(4-sulphophenylazo)-1-naphthylazo]naphthalene-2,7-disulphonate
Carbon black or Vegetable carbon or Channel black	E 153	—	—
Carotenoids:	E 160		
alpha-carotene, beta-carotene, gamma-carotene	E 160(*a*)	75130	mainly in the *trans* forms
annatto, bixin, norbixin	E 160(*b*)	75120	annatto includes bixin, the principal colouring of oil extracts of annatto, and norbixin, the alkaline salt of which is the principal colouring of aqueous extracts of annatto

Column 1 *Name of colour*	Column 2 *Serial number*	Column 3 *Colour index (1971) number*	Column 4 *Systematic name or description*
capsanthin or capsorubin	E 160(*c*)	—	paprika extract
lycopene	E 160(*d*)	75125	mainly in the *trans* forms
beta-apo-8′-carotenal (C30)	E 160(*e*)	40820	β-8′-apocarotenal. mainly in the *trans* forms
ethyl ester of beta-apo-8′-carotenic acid (C30)	E 160(*f*)	40825	ethyl β-8′-apocarotenate mainly in the *trans* forms
Flavoxanthin	E 161(*a*)	—	the ketonic or hydroxylic derivatives of carotenes
Lutein	E 161(*b*)	—	
Cryptoxanthin	E 161(*c*)	—	
Rubixanthin	E 161(*d*)	75135	
Violaxanthin	E 161(*e*)	—	
Rhodoxanthin	E 161(*f*)	—	
Canthaxanthin	E 161(*g*)	40850	
Beetroot Red or Betanin	E 162	—	aqueous extract of red beetroots
Anthocyanins	E 163	—	(*a*) those glycosides of 2-phenylbenzopyrylium salts which are anthocyanins; (*b*) the following anthocyanidin aglycones: pelargonidin; cyanidin; peonidin; delphinidin; petunidin; malvidin.
The following natural substances having a secondary colouring effect:			
(*a*) paprika	—	—	—
(*b*) turmeric	—	75300	—
(*c*) saffron	—	75100	—
(*d*) sandalwood	—	—	—
(*e*) the pure colouring principle of any of the colouring matters listed under (*a*) to (*d*) above			—

Column 1 *Name of colour*	Column 2 *Serial number*	Column 3 *Colour index (1971) number*	Column 4 *Systematic name or description*
Titanium dioxide	E 171	77891	—
Iron oxides and hydroxides	E 172	77489 77491 77492 77499	— — — —
COLOURING MATTERS FOR CERTAIN PURPOSES ONLY			
Aluminium	E 173	77000	—
Silver	E 174	—	
Gold	E 175	77480	
Pigment Rubine or Lithol Rubine BK	E 180	15850	only the calcium and aluminium salts of 3-hydroxy-4-(2-sulpho-*p*-tolylazo)-2-naphthoic acid
Burnt Umber	E 181	—	product obtained by roasting in air a mixture consisting essentially of iron and manganese oxides, and calcium and aluminium silicates, carbonates and sulphates
Methyl violet	—	42535	mixture of the hydrochlorides of the more highly methylated pararosanilines containing principally the *N*-tetra, penta-, and hexa-methyl derivatives
The synthetic equivalent identical with the pure colouring principle of any natural colouring matter described in this Part of this Schedule	—	—	—

1. Each colouring matter specified in column 1 of the above table shall, except where otherwise provided in any specific purity criteria in relation to that colouring matter in Part II of this Schedule and in the case of E 180 Pigment Rubine, include the acid form of the colouring matter and its sodium, calcium, potassium and aluminium salts (lakes).

PART II

Specific purity criteria applicable to permitted colouring matter

E 101 *Riboflavin or Lactoflavin*

1. Limit test for lumiflavin (7,8,10-trimethylisoalloxazine):

The colour of the filtrate obtained by shaking 25 mg of the colouring matter with 10 ml of ethanol-free chloroform for 5 minutes and filtering shall not be more intense than that of an aqueous solution obtained by diluting 3 ml of 0.1 N potassium dichromate to 1,000 ml.

2. The ethanol-free chloroform to which the preceding paragraph refers shall be prepared as follows:

carefully shake 20 ml of chloroform with 20 ml of water for 3 minutes and allow time to separate; draw off the chloroform layer and repeat the extraction twice using 20 ml each time; filter the chloroform through dry filter paper, shake the filtrate well for 5 minutes with 5 g of powdered anhydrous sodium sulphate, leave the mixture to stand for 2 hours and decant or filter the clear chloroform.

E 102 *Tartrazine*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of subsidiary colours.

E 104 *Quinoline Yellow*

1. The colouring matter shall not contain more than 0.2 per cent. of water-insoluble matter.

E 105 *Fast Yellow AB*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 3 per cent. of subsidiary colours;

(*c*) more than 10 milligrams per kilogram of unsulphonated aromatic amines, including 2-aminoazobenzene, 4-aminoazobenzene and aniline.

2. The quantities of 2-aminoazobenzene and 4-aminoazobenzene present in the colouring matter shall be determined by the following method:

dissolve 20 g of the colouring matter in 400 ml of water; add 5 ml of N sodium hydroxide, and shake 4 times with 50 ml of chlorobenzene in a separating funnel for 5 minutes. Wash the combined chlorobenzene extract with successive amounts of 400 ml of 0.1 N sodium hydroxide until the upper aqueous layer remains colourless. Filter the chlorobenzene solution through a thick folded filter. Concentrate 100 ml of the chlorobenzene extract to about 20 ml by heating on a water bath in a current of hot air; pour the concentrated solution on to a suitably activated alumina column of appropriate size; elute with chlorobenzene. The first 100 ml of the chlorobenzene elute contains the 2-aminoazobenzene; elution of 4-aminoazobenzene follows thereafter. Make up a solution of each compound to 100 ml. Measure the extinction of the 2-aminoazobenzene (E_1) and that of the 4-aminoazobenzene (E_2) in a spectrophotometer against chlorobenzene contained in cells of suitable thickness (d_1 and d_2 cms respectively) at 414 nm and 376 nm respectively. Calculate the quantities of 2-aminoazobenzene and 4-aminoazobenzene present in the colouring matter using the following formulae;

$$\text{2-aminoazobenzene content (milligrams per kilogram)} = \frac{E_1 \times 100}{0.397 \times d_1}$$

$$\text{4-aminoazobenzene content (milligrams per kilogram)} = \frac{E_2 \times 100}{1.10 \times d_2}$$

it being understood that:

$E^{1\ mg/ml}_{1\ cm}$ at 414 nm for 2-aminoazobenzene = 39.7

and

$E^{1\ mg/ml}_{1\ cm}$ at 376 nm for 4-aminoazobenzene = 110

3. The quantity of aniline present in the colouring matter shall be determined by the following method:

shake 75 ml of the residuum of the chlorobenzene extract, to which reference is made in the preceding paragraph, with 2 successive portions of 50 ml of 0.5 N hydrochloric acid, then with 2 successive portions of 25 ml of water; neutralise the combined aqueous extracts with a 30 per cent. solution of sodium hydroxide and acidify with 10 ml of 0.5 N hydrochloric acid; dissolve 1-2 g of potassium bromide in this solution. After cooling in iced water add about 20 drops of 0.1 N sodium nitrite and allow to stand for 10 minutes; remove any excess of nitrite by adding sulphamic acid. Pour the solution into about 5 ml of a 3 per cent. solution of R Salt (*di*sodium 3-hydroxynaphthalene- 2,7-disulphonate) added to 10 ml of 2 N sodium hydroxide; allow to stand for 15 minutes. Acidify the solution of the dyestuff with Congo Red as indicator, until the latter turns blue, and filter. The aminoazobenzene dyestuff will remain on the filter. Dilute the filtrate to 200 ml and measure its extinction (E_3) in a spectrophotometer against chlorobenzene contained in cells of suitable thickness (d_3 cms) at 490 nm. Calculate the quantity of aniline present in the colouring matter, using the following formula:

$$\text{aniline content (milligrams per kilogram)} = \frac{E_3 \times 266}{2.26 \times d_3}$$

it being understood that:

$E^{1\ mg/ml}_{1\ cm}$ at 490 nm for aniline = 226

Yellow 2G

1. The colouring matter shall not contain—

(*a*) more than 0.1 per cent. of water-insoluble matter;

(*b*) more than 2 per cent. of subsidiary colours.

E 110 Sunset Yellow FCF or Orange Yellow S

1. The colouring matter shall not contain more than 0.2 per cent. of water-insoluble matter.

Orange G

1. The colouring matter shall not contain—

(*a*) more than 0.1 per cent. of water-insoluble matter;

(*b*) more than 2 per cent. of subsidiary colours.

Orange RN

1. The colouring matter shall not contain—

(*a*) more than 0.1 per cent. of water-insoluble matter;

(*b*) more than 20 per cent. of *di*Sodium 3-hydroxy-4-phenylazonaphthalene-2,7-disulphonate (CI 16,100);

(*c*) more than 1 per cent. of subsidiary colours other than that referred to in the preceding sub-paragraph.

E 120 *Cochineal or Carminic acid*

1. Using paper chromatography, the colouring matter shall give only a single spot in the alkaline zone with a solution of 2 g of trisodium citrate in 100 ml of a 5 per cent. solution of ammonium hydroxide (ammonia solution).

E 122 *Carmoisine or Azorubine*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of subsidiary colours.

E 123 *Amaranth*

1. The colouring matter shall not contain more than 0.2 per cent. of water-insoluble matter.

E 124 *Ponceau 4R or Cochineal Red A*

1. The colouring matter shall not contain more than 0.2 per cent. of water-insoluble matter.

E 127 *Erythrosine BS*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 3 per cent. of subsidiary colours;

(*c*) more than 1,000 milligrams per kilogram of mineral iodides (evaluated as sodium iodide).

Red 2G

1. The colouring matter shall not contain—

(*a*) more than 0.1 per cent. of water-insoluble matter;

(*b*) more than 2 per cent. of subsidiary colours.

E 131 *Patent Blue V*

1. The colouring matter shall not contain—

(*a*) more than 0.5 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of subsidiary colours;

(*c*) more than 20 milligrams per kilogram of chromium (expressed as Cr).

E 132 *Indigo Carmine or Indigotine*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(b) more than 1 per cent. of isatin-4(5 or 6 or 7) sulphonic acid;

(*c*) more than 20 per cent. of *di*Sodium 5,7'-indigotindisulphonate;

(*d*) more than 1 per cent. of subsidiary colours other than that referred to in the preceding sub-paragraph.

Brilliant Blue FCF

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 7 per cent. of subsidiary colours;

(*c*) more than 6 per cent. of the leuco base;

(*d*) more than 0.35 per cent. of free aromatic amines.

(*e*) more than 2 per cent. of synthetic intermediates other than free aromatic amines;

(*f*) more than 0.4 per cent. of diethyl ether extract.

E 141 *Copper Complexes of chlorophyll and chlorophyllins*

1. The colouring matter shall not contain more than 200 milligrams per kilogram of copper (free ionisable Cu).

2. A 1 per cent. solution of copper complex of chlorophyll in turpentine shall not be turbid and shall not give a sediment.

E 142 *Green S or Acid Brilliant Green BS or Lissamine Green*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of subsidiary colours.

Brown FK

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 5 per cent. of subsidiary colours;

(*c*) more than 0.5 per cent. of free aromatic amines (calculated as 1,3-phenylenediamine);

(*d*) more than 1 per cent. of synthetic intermediates other than free aromatic amines.

2. The colouring matter shall not contain more than the following proportions of the following components identified in column 4 of the table in Schedule 1 Part I:

(*a*) Component I: 26 per cent.;

(*b*) Component II: 17 per cent.;

(*c*) Component III: 17 per cent.;

(*d*) Component IV: 16 per cent.;

(*e*) Component V: 20 per cent.;

(*f*) Component VI: 16 per cent.

Chocolate Brown FB

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1.5 per cent. of synthetic intermediates other than free aromatic amines;

(*c*) more than 1 per cent. of diethyl ether extract.

Chocolate Brown HT

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of synthetic intermediates other than free aromatic amines;

(*c*) more than 15 per cent. of subsidiary colours.

2. Where any subsidiary colours are present, they shall consist principally of *monoSodium* 4-(a,2,4-trihydroxy-*m*-tolylazo)naphthalene-l-sulphonate.

E 150 *Caramel*

1. The colouring matter shall not contain—

(*a*) more than 0.5 per cent. of phosphates, expressed as P_2O_5;

(*b*) more than 0.5 per cent. of ammoniacal nitrogen.

2. The quantity of ammoniacal nitrogen referred to in the preceding sub-paragraph and present in the colouring matter shall be determined according to the Tillmans-Mildner method, as follows:

Mix 5-10 g of the colouring matter with 300 ml of water and 1-2 g of mgO, and distil. (To avoid foaming, a few drops of octyl alcohol, silicone, or a few drops of paraffin oil, or small pieces of paraffin, are added.) The duration of the distillation should be 35 minutes, of which 10 minutes is required for heating up and 25 minutes for the distillation. Absorb the volatile nitrogen compounds which are liberated in excess of 0.1 N sulphuric acid. After back titration of the excess, the amount of nitrogen can be calculated using the following formula:

1 ml 0.1 N sulphuric acid=1.4 mg nitrogen.

3. The pH of the colouring matter shall be not less than 1.8.

E 151 *Black PN or Brilliant Black BN*

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 1 per cent. of synthetic intermediates;

(*c*) more than 15 per cent. of subsidiary colours.

2. Where any subsidiary colours are present, they shall consist principally of the diacetyl compound.

E 152 *Black* 7984

1. The colouring matter shall not contain—

(*a*) more than 0.2 per cent. of water-insoluble matter;

(*b*) more than 10 milligrams per kilogram of lead;

(*c*) more than 2 milligrams per kilogram of arsenic.

E 153 *Carbon Black or Vegetable Carbon or Channel Black*

1. Limit test for residual higher aromatic hydrocarbons:

The extract obtained by extracting 1 g of the colouring matter with 10 g of pure cyclohexane for 2 hours shall not show any colour; in ultra-violet light it shall give practically no fluorescence; there shall be no residue on evaporation.

2. Limit test for tar products:

The filtrate obtained by boiling 2 g of the colouring matter with 20 ml of N sodium hydroxide and filtering shall be colourless.

E 160*a Beta-Carotene*

1. Using chromatography, by adsorption on alumina or silica gel, pure beta-carotene shall give only one zone.

E 160*b Annatto, Bixin, Norbixin*

1. Annatto shall be identified according to the following method and criteria:

(*a*) Dissolve a sufficient quantity of annatto in benzene or sufficiently dilute a benzene solution of annatto to obtain a solution of the same colour as a 0.1 per cent. potassium dichromate solution. Pour 3 ml of the solution on the top of an alumina column; elute slowly. Wash the column three times with benzene. Bixin is very strongly absorbed on the surface of the alumina, forming a brilliant orange-red zone (which distinguishes it from crocetin). A very pale yellow zone usually moves very quickly down the column, even with pure crystalline bixin. The bixin cannot be eluted with benzene, petroleum ether, chloroform, acetone, ethanol or methanol, but ethanol and methanol cause the orange colour to turn into an orange-yellow.

(*b*) Proceed as described in the preceding sub-paragraph, then remove the benzene from the column by washing three times with chloroform previously dried with potassium carbonate. After elution of the last chloroform washing add 5 ml of Carr-Price reagent (antimony trichloride—a saturated solution in chloroform) at the top of the column. The bixin zone immediately turns blue/green (which distinguishes it from crocetin). This is known as the Carr-Price Reaction

2. Bixin shall be identified according to the following method and criteria:

Dissolve 1-2 mg of crystalline bixin in 20 ml of chloroform. Add 5 ml of this solution to the top of a suitable alumina column. Rinse the solution with chloroform previously dried with sodium carbonate. After elution of the last chloroform washing add 5 ml of Carr-Price reagent at the top of the column. The bixin zone immediately turns blue-green.

3. Alkaline solutions of norbixin shall be identified according to the following method and criteria:

Place 2 ml of an aqueous annatto solution in a 50 ml separating funnel. Add a sufficient quantity of 2 N sulphuric acid to obtain a strongly acid reaction. Norbixin separates as a red precipitate. Add 50 ml of benzene and shake vigorously. After separation, discard the aqueous layer and wash the benzene solution with 100 ml of water until the solution is no longer acid. Centrifuge the solution (usually emulsified) of norbixin in benzene for 10 minutes at 2,500 revolutions per minute. Decant the clear norbixin solution and dry with anhydrous sodium sulphate. Add 3-5 ml of this solution to the top of an alumina column. Norbixin, like bixin, forms an orange/red zone at the surface of the alumina. Treated by the elutants benzene, petroleum ether, chloroform, acetone, ethanol or methanol it behaves like bixin and also gives the Carr-Price reaction described in sub-paragraph (*b*) of paragraph 1 above.

E 162 *Beetroot Red or Betanin*

1. Using ascending paper chromatography, with butanol saturated with 2 N hydrochloric acid as solvent, the colouring matter shall give a single red spot with a brownish trail and little migration.

E 171 *Titanium dioxide*

1. The weight of the residue obtained by the following method shall not exceed 0.0175 g:

Suspend 5 g of the colouring matter in 100 ml of 0.5 N hydrochloric acid and heat for 30 minutes on a water bath, shaking occasionally. Filter through a Gooch crucible containing a filter bed which shall consist of three layers—the first, coarse asbestos; the second, filter paper reduced to a pulp; and the third, fine asbestos. Wash with three successive 10 ml portions of 0.5N hydrochloric acid. Evaporate the filtrate to dryness in a platinum evaporating dish and heat to a dull red until the weight of the residue is constant.

2. The colouring matter shall not contain—

(*a*) more than 100 milligrams per kilogram of antimony;

(*b*) more than 50 milligrams per kilogram of zinc;

(*c*) more than 5 milligrams per kilogram of soluble barium compounds (expressed as Ba).

E 172 *Iron oxides and hydroxides*

1. The colouring matter shall not contain—

(*a*) more than 1 milligram per kilogram of selenium;

(*b*) more than 1 milligram per kilogram of mercury.

E 181 *Burnt Umber*

1. The colouring matter shall not contain more than 8 per cent. of manganese oxides, expressed as Mn_3O_4.

2. The filtrate obtained by the following method, designed to test for the presence of incompletely burnt organic material, shall be colourless:

Boil 2 g of the colouring matter with 30 ml of a 20 per cent. solution of potassium hydroxide, and filter.

PART III

General purity criteria applicable to permitted colouring matter except where otherwise provided by specific purity criteria

Inorganic impurities

1. Each colouring matter shall not contain—

(*a*) more than 5 milligrams per kilogram of arsenic;

(*b*) more than 20 milligrams per kilogram of lead;

(*c*) more than 100 milligrams per kilogram of any of the following substances, namely antimony, copper, chromium, zinc or barium sulphate, or more than 200 milligrams per kilogram of any combination of those substances.

Organic impurities

2.—(1) Each synthetic organic colouring matter shall not contain—

(*a*) more than 0.01 per cent. of free aromatic amines;

(*b*) more than 0.5 per cent. of synthetic intermediates other than free aromatic amines;

(*c*) more than 4 per cent. of subsidiary colours such as isomers or homologues,

(2) Each sulphonated organic colouring matter shall not contain more than 0.2 per cent. of any substance extractable by diethyl ether.

SCHEDULE 2 Regulations 2(1) and 6

PART I

Permitted diluents other than permitted solvents

Sodium carbonate
Sodium hydrogen carbonate
Sodium chloride
Sodium sulphate
Glucose
Lactose
Sucrose
Dextrins
Starches
Sorbitol
Edible oils and fats
Beeswax
Water
Citric acid
Tartaric acid
Lactic acid
Gelatin
Pectins
Ammonium, sodium or potassium alginates
Esters of L-ascorbic acid with straight-chain C14, C16 and C18 fatty acids, used exclusively with the colouring matters described in the table in Part I of Schedule 1 in relation to the serial numbers E 160 and E 161 specified in column 2.
Acetic acid
Sodium hydroxide
Ammonium hydroxide (ammonia solution).

PART II

General purity criteria applicable to permitted diluents other than permitted solvents

Inorganic impurities

Each diluent shall not contain—

(*a*) more than 5 milligrams per kilogram of arsenic;

(*b*) more than 20 milligrams per kilogram of lead;

(*c*) more than 100 milligrams per kilogram of any of the following substances, namely antimony, copper, chromium, zinc or barium sulphate, or more than 200 milligrams per kilogram of any combination of those substances.

PART III

Purity criteria applicable to permitted solvents which are permitted diluents

Each permitted solvent shall comply with the specification specified in relation thereto in Schedule 1 to the Solvents in Food Regulations (Northern Ireland) 1967, and, so far as is not otherwise provided by that specification, shall not contain—

(*a*) more than 2 milligrams per kilogram of arsenic;

(*b*) more than 10 milligrams per kilogram of lead;

(*c*) more than 100 milligrams per kilogram of any of the following substances, namely antimony, copper, chromium, zinc or barium sulphate, or more than 200 milligrams per kilogram of any combination of these substances.

SCHEDULE 3 Regulation 4

Colouring matter permitted only in certain foods

Column 1 *Food*	Column 2 *Permitted colouring matter*	Column 3 *Restriction on use*
Dragees	Aluminium Silver Gold	For external colouring only
Sugar coated flour confectionery	Aluminium Silver Gold	For decoration only
Hard cheese	Pigment Rubine or Lithol Rubine BK Burnt Umber	On the rind only
Raw or unprocessed meat	Methyl Violet	For marking only
Citrus fruit	Methyl Violet	For marking only

SCHEDULE 4 Regulation 7

Labelling of permitted colouring matter and permitted diluents

1.—(1) Each container to which regulation 7 applies shall bear a label on which is printed a true statement—

(*a*) in respect of each permitted colouring matter present, of the serial number, if any, as specified in relation thereto in column 2 of the table in Part I of Schedule 1 to these regulations, and of the common or usual name or an appropriate designation of that permitted colouring matter; and

(*b*) where any permitted diluent or diluents other than water is or are present, of the common or usual name or an appropriate designation of each such diluent;

and, if two or more such substances are present, the said statement shall be in the form of a list in compliance with the following sub-paragraph.

(2) The list referred to in the preceding sub-paragraph shall, unless the quantity or proportion of each such substance is specified, be in the order of the proportion by weight which each such substance bears to the total contents of the container at the time of sale by the manufacturer, the common or usual name or appropriate designation of the substance present at that time in the greatest proportion by weight being listed first.

(3) The said statement shall be headed or preceded by the words "food colour".

2. Any statement required by the preceding paragraph—

(*a*) shall be clear and legible;

(*b*) shall be in a conspicuous position on the label which shall be marked on, or securely attached to, the container in such a manner that it will be readily discernible and easily read by an intending purchaser or consumer under normal conditions of purchase or use;

(*c*) shall not be in any way hidden or obscured or reduced in conspicuousness by any other matter, whether pictorial or not, appearing on the label.

3. The figures and the letters in every word in any statement to which the preceding paragraph applies —

(*a*) shall be in characters of uniform colour and size (being not less than 1.5 millimetres in height for a label on a container of which the greatest dimension does not exceed 12 centimetres, and not less than 3 millimetres in height for a label on a container of which the greatest dimension exceeds 12 centimetres), but so that the initial letter of any word may be taller than any other letter in the word;

(*b*) shall appear on a contrasting ground, so however that where there is no ground other than such as is provided by a transparent container and the contents of that container are visible behind the letters, those contents shall be taken to be the ground for the purposes of this paragraph;

(*c*) shall be within a surrounding line and no other written or pictorial matter shall appear within that line.

4. For the purposes of this Schedule—

(*a*) the height of any lower case letter shall be taken to be the x height thereof, disregarding any ascender or descender thereof;

(*b*) any requirement that figures or letters shall be of uniform height, colour or size, shall be construed as being subject to the saving that any inconsiderable variation in height, colour or size, as the case may be, may be disregarded.

EXPLANATORY NOTE

(This note is not part of the Regulations, but is intended to indicate their general purport.)

These regulations come into operation on 1st July 1974 except for regulations 13 and 15(2) which come into operation on 17th December 1973.

The regulations supersede the Colouring Matter in Food Regulations (Northern Ireland) 1966, ("the 1966 Regulations") and implement EEC Council Directive of 23rd October 1962 on the approximation of the rules of Member States concerning colouring matters authorised for use in food intended for human consumption (O.J. No. 115, 11.11.1962, p. 2645/62) (S.E. 1959-1962 p. 279), as amended by Council Directive No. 65/469/EEC (O.J. No. 178, 26.10.65, p. 2793/65) (S.E. 1965-1966, p. 82), Council Directive No. 67/653/EEC (O.J. No. 263, 30.10.1967, p. 4) (S.E. 1967 p. 285), Council Directive No. 68/419/EEC (O.J. No. L. 309, 24.12.1968, p. 24) (S.E. 1968(II) p. 597), Council Directive No 70/358/EEC (O.J. No. L. 157, 18.7.70, p. 36) (S.E. 1970 (II) p. 434) and the Act annexed to the Treaty of Accession to the European Economic Community (Annex I: XI paragraph 1, Annex VII: IX paragraph 1 and Annex XI: X paragraph 1). From 17th December 1973 until 1st July 1974 transitional arrangements are provided (regulation 15(2)) exempting from the provisions of the 1966 Regulations any sale, consignment, delivery, possession or advertisement for sale which complies with any corresponding provision of these regulations and consequential amendment is made, with effect from 17th December 1973, to the Preservatives in Food Regulations (Northern Ireland) 1962, prescribing a maximum sulphur dioxide content for E 150 Caramel (regulation 13).

The regulations—

(*a*) specify permitted colouring matters and permitted diluents which may be combined with such colouring matters and prescribe purity criteria for those colouring matters and diluents (regulations 2 and 6 and Schedules 1 and 2);

(*b*) prohibit the sale or possession of food having in it or on it any colouring matter other than a permitted colouring matter and limit the use of certain particular permitted colouring matters to specified foods (regulation 4 and Schedule 3);

(*c*) limit the use of permitted colouring matters in or on certain named foods (regulation 5);

(*d*) prohibit the sale, possession or advertisement for sale of any colouring matter other than a permitted colouring matter (regulation 7(1));

(*e*) prescribe labelling requirements for permitted colouring matters sold as such (regulation 7(2) and Schedule 4);

(*f*) make consequential amendments to the Arsenic in Food Regulations (Northern Ireland) 1961, the Lead in Food Regulations (Northern Ireland) 1961, and the Butter Regulations (Northern Ireland) 1966 (regulations 11, 12 and 14).

The regulations do not apply to any colouring matter, to any diluent combined with any colouring matter, or to any food having colouring matter in it or on it, which is sold, consigned or delivered for export, or for the purpose of scientific laboratory testing (regulation 3).