



Hazardous Materials List

Version: 1.12.2016 v 1.5

All agrochemicals, especially pesticides, can be potentially hazardous in some form or other to human and animal health as well as to the environment and therefore should be used only under caution. Fairtrade International recommends the use of other methods like proper choice of crops and varieties, suitable cultivation practices and biological material for pest, before a chemical pesticide is used for pest control.

The Hazardous Materials List (HML) is divided in three lists: the Red List, the Orange List and the Yellow List.

- **Red List:** The Red List is a 'prohibited' list and includes materials that must not be used on Fairtrade products.
- **Orange List:** The Orange List is a 'restricted' List and includes materials that may be used under conditions specified in this document thus restricting their use. The use of materials in this list will be monitored by Fairtrade International. Operators should be aware that some of these materials are to be phased out by 30 June 2020 or by 30 June 2022 as indicated in the list. The other materials in the list may eventually be prohibited and are encouraged to abandon their use.
- **Yellow List:** The Yellow List is a 'flagged' list and includes materials which are flagged for being hazardous and should be used under extreme caution. Fairtrade International will be monitoring the classification of these materials by international bodies like PAN, WHO and FAO, and materials may be prohibited in the future. Operators are encouraged to abandon their use.

Classification of materials in the HML

The Hazardous Materials List includes materials that are identified as Highly Hazardous as defined in the Code of Conduct on Pesticide Management adopted by FAO and WHO in 2013. The HML has been build based on information from PAN International List of Highly Hazardous Pesticides (HHP).

Highly Hazardous Pesticides (FAO/WHO)

"Highly Hazardous Pesticides means pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or GHS or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous."

"Hazard means the inherent property of a substance, agent or situation having the potential to cause undesirable consequences (e.g. properties that can cause adverse effects or damage to health, the environment or property)."



Hazard criteria for identification of Highly Hazardous Pesticides¹

| Hazard criteria | Measure (hazard classifications used) |
|--|---|
| Conventions | <p>Persistent Organic Pollutants (Stockholm Convention)</p> <p>PIC substances (The Rotterdam Convention on the Prior Information Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade)</p> <p>Ozone depleting substances (Montreal Protocol)</p> |
| High acute toxicity | <p>'Extremely hazardous' (Class 1a) according to WHO Recommended Classification of Pesticides by Hazard</p> <p>'Highly hazardous' (Class 1b) according to WHO Recommended Classification of Pesticides by Hazard</p> <p>'Fatal if inhaled' (H330) according to the Globally Harmonized System (GHS)</p> |
| Long term toxic effect or chronic exposure | <p>Carcinogenic to humans according to IARC, US EPA or 'Known or presumed human carcinogens' (Category 1) according to the Globally Harmonized System (GHS)</p> <p>Probable/likely carcinogenic to humans according to IARC, US EPA</p> <p>'Substances known to induce heritable mutations (mutagenic) or to be regarded as if they induce heritable mutations in the germ cells of humans', 'Substances known to induce heritable mutations in the germ cells of humans' (Category 1) according to the Globally Harmonized System (GHS)</p> <p>'Known or Presumed human reproductive toxicant' (reprotoxic) (Category 1) according to the Globally Harmonized System (GHS)</p> <p>Potential endocrine disruptor according to EU Category 1 or 'Suspected human reproductive toxicant' (Category 2) AND 'Suspected human carcinogen' (Category 2) according to the Globally Harmonized System (GHS) or</p> |
| Environmental concern | <p>'Very persistent' half-life > 60 days in marine-or freshwater or half-life > 180 days in soil ('typical' half-life), marine or freshwater sediment (indicators and thresholds according to the Stockholm Convention) and/or</p> <p>'Very bioaccumulative' (BCF >5000) or Kow logP >5 (existing BCF data supersede Kow log P data) (indicators and thresholds according to the Stockholm Convention) and/or</p> <p>Very toxic to aquatic organisms (LC/EC 50 [48h] for Daphnia spp. < 0,1 mg/l)</p> |
| Hazard to ecosystem services | <p>'Highly toxic for bees' according to U.S. EPA (LD50, µg/bee < 2) (includes Greenpeace bee toxic 7, namely: Clothianidin, Imidacloprid, Thiametoxam, Clorpyrifos, Cypermethrin, Deltamethrin, and Fipronil)</p> |

¹ A glossary of terms and abbreviations used are given in the end of this document.



Part 1: Fairtrade International Red List of Prohibited Materials

The Red List is a 'prohibited' list and includes Highly Hazardous Pesticides that must not be used on Fairtrade products.

The criteria for classifying a material in the Red List are:

- Listed in conventions OR
- High acute toxicity OR
- Long term toxic effect or chronic exposure (Carcinogenic, Mutagenic, Repro-toxic, Endocrine disruptor) OR
- Environmental concern (two of the following three effects on environment a) Very persistent, b) Very bioaccumulative, c) Very toxic to aquatic organisms; OR
- Considered as obsolete

| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|------------|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 1 | 2,3,4,5-Bistetrahydro-2-furaldehyde | 126-15-8 | | | | | | x |
| 2 | 2,4,5-T | 93-76-5 | x | | | | | x |
| 3 | 2,4,5-TCP | 35471-43-3 | | | | | | x |
| 4 | Abamectin | 71751-41-2 | | x (h330) | | | | |
| 5 | Acetochlor | 34256-82-1 | | | x | | | |
| 6 | Acrolein | 107-02-8 | | x | | | | |
| 7 | Alachlor | 15972-60-8 | x | | x | | | |
| 8 | Aldicarb | 116-06-3 | x | x | | | x | |
| 9 | Aldrin | 309-00-2 | x | | | x | x | x |
| 10 | Allyl alcohol | 107-18-6 | | x | | | | |
| 11 | alpha-BHC;alpha-HCH | 319-84-6 | x | | | | | |
| 12 | Alpha-chlorohydrin* | 96-24-2 | | x | | | | |
| 13 | Amitrole | 61-82-5 | | | x | | | |
| 14 | Anthracene oil | 90640-80-5 | | | x | | | |
| 15 | Arsenic and its compounds | 7778-39-4 | | | x | | | |
| 16 | Asbestos | 1332-21-4 | | x | | | | |
| 17 | Azafenidin | 68049-83-2 | | | x | | | |
| 18 | Azinphos-ethyl | 2642-71-9 | | x | | | x | |
| 19 | Azinphos-methyl | 86-50-0 | x | x | | | x | |
| 20 | Azocyclotin | 41083-11-8 | | x | | x | | |
| 21 | Benomyl | 17804-35-2 | x | | x | | | |

² Note: Hazard to ecosystem services is not a criteria for Red list, but the column is added to Red list to indicate that the materials are bee toxic also.



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|--------------------------------|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 22 | Beta – cyfluthrin | 68359-37-5 | | x (WHO 1b) | | | | |
| 23 | beta-HCH; beta-BCH | 319-85-7 | x | | x | | | |
| 24 | Binapacryl | 485-31-4 | x | | | | | x |
| 25 | Blasticidin-S | 2079-00-7 | | x | | | | |
| 26 | Brodifacoum* | 56073-10-0 | | x | | | | |
| 27 | Bromadiolone* | 28772-56-7 | | x | | | | |
| 28 | Bromethalin* | 63333-35-7 | | x | | x | | |
| 29 | Bromoxynil | 1689-84-5 | | x | | | | |
| 30 | Bromoxynil heptanoate | 56634-95-8 | | | | x | | |
| 31 | Bromoxynil octanoate | 1689-99-2 | | | | x | | |
| 32 | Butocarboxim | 34681-10-2 | | x | | | x | |
| 33 | Butoxycarboxim | 34681-23-7 | | x | | | | |
| 34 | Cadmium compounds | 7440-43-9 | | x | | | | x |
| 35 | Cadusafos | 95465-99-9 | | x | | x | x | |
| 36 | Calcium arsenate | 7778-44-1 | | x | | | | |
| 37 | Calcium cyanide | 592-01-8 | | x | | | | |
| 38 | Captafol | 2425 06 1 | x | x | x | | | |
| 39 | Captan | 133-06-2 | | | x | | | |
| 40 | Carbofuran | 1563-66-2 | x | x | | | x | |
| 41 | Carbon tetrachloride | 56-23-5, 53908-27-3, 8003-06-3 | | | x | | | x |
| 42 | Carbosulfan | 55285-14-8 | x (h330) | | | | | |
| 43 | Chloranil | 118-75-2 | | | | | | x |
| 44 | Chlordane | 57-74-9 | x | | x | | | |
| 45 | Chlordecone | 143-50-0 | x | | | x | x | x |
| 46 | Chlordimeform | 6164-98-3 | | | x | | | x |
| 47 | Chlorethoxyphos | 54593-83-8 | | x | | | x | |
| 48 | Chlorfenvinphos | 470-90-6 | | x | | | x | |
| 49 | Chlorfluazuron | 71422-67-8 | | | | x | | |
| 50 | Chlormephos | 24934-91-6 | | x | | | | |
| 51 | Chlorobenzilate | 510-15-6 | x | | | | | x |
| 52 | Chlorophacinone* | 3691-35-8 | | x | | | | |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|----------------------|---------------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 53 | Chloropicrin | 76-06-2 | | x | | | | |
| 54 | Chlorothalonil | 1897-45-6 | | x (h330) | | | | |
| 55 | Chlorotoluron | 15545-48-9 | | | x | | | |
| 56 | Chlorpyrifos, Chlorpyrifos-methyl | 2921-88-2, 5598-13-0 | | | | | x | |
| 57 | Clothianidin | 210880-92-5 | | | | | x | |
| 58 | Copper arsenate | 7778-41-8 | | | x | | | |
| 59 | Coumaphos* | 56-72-4 | | x | | | | |
| 60 | Coumatetralyl* | 5836-29-3 | | x | | | | |
| 61 | CPMA (Chloromethoxypropyl-mercuric-acetate) | 1319-86-4 | | x | x | | | |
| 62 | Creosote | 8001-58-9 | | | x | | | |
| 63 | Cyhexatin | 13121-70-5 | | | | x | | |
| 64 | DBCP | 96-12-8 | | | x | | | x |
| 65 | DDD (dichlorodiphenyl – dichloroethan) | 72-54-8 | | x | x | x | | |
| 66 | DDT | 50-29-3 | x | | x | x | | |
| 67 | Demeton-S-methyl | 919-86-8 | | x | | | x | |
| 68 | Dichlorvos; DDVP | 62-73-7 | x (WHO 1b and h330) | | | | | |
| 69 | Dicofol | 115-32-2 | | | | x | x | |
| 70 | Dicrotophos | 141-66-2 | | x | | | x | |
| 71 | Dieldrin | 60-57-1 | x | | | x | x | x |
| 72 | Difenacoum* | 56073-07-5 | | x | | | | |
| 73 | Difethialone* | 104653-34-1 | | x | | | | |
| 74 | Dimoxystrobin | 149961-52-4 | | | x | x | | |
| 75 | Dinocap | 39300-45-3 | | | x | | | |
| 76 | Dinoseb and its salts and esters | 88-85-7 | x | | | | | x |
| 77 | Dinoterb | 1420-07-1 | | x | x | | | |
| 78 | Diphacinone* | 82-66-6 | | x | | | | |
| 79 | Diquat dibromide | 85-00-7 | | x | | | | |
| 80 | Diquat dichloride | 4032-26-2 | | x | | | | |
| 81 | Disulfoton | 298-04-4 | | x | | | | |
| 82 | DNOC and its salts | 534-52-1 | x | x | | | | |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|---------------------------------------|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 83 | Edifenphos | 17109-49-8 | | x | | | | |
| 84 | Endosulfan | 115-29-7 | x | x | x | | | |
| 85 | Endrin | 72-20-8 | x | | | | | x |
| 86 | E-Phosphamidon | 297-99-4 | | x | | | | |
| 87 | Epichlorohydrin | 106-89-8 | | | x | | | |
| 88 | EPN | 2104-64-5 | | x | | | x | |
| 89 | Ethiofencarb | 29973-13-5 | | x | | | | |
| 90 | Ethoprophos; Ethoprop | 13194-48-4 | | x | | | | |
| 91 | Ethylene dichloride, EDC | 107-06-2 | x | | x | | | x |
| 92 | Ethylene oxide | 75-21-8 | x | | x | | | |
| 93 | Ethylene thiourea | 96-45-7 | | | x | | | |
| 94 | Ethylenedibromide;1,2-dibromoethane, EDB | 106-93-4 | x | | x | | | x |
| 95 | Famphur | 52-85-7 | | x | | | | |
| 96 | Fenamiphos | 22224-92-6 | | x | | | x | |
| 97 | Fenarimol | 60168-88-9 | | | x | | | |
| 98 | Fenbutatin-oxide | 13356-08-6 | | x | | x | | |
| 99 | Fenchlorazole-ethyl | 103112-35-2 | | | x | | | |
| 100 | Fenpropathrin | 39515-41-8 | x (h330) | | | | | |
| 101 | Fentin acetate | 900-95-8 | | x | x | | | |
| 102 | Fentin hydroxide | 76-87-9 | | x | x | | | |
| 103 | Flocoumafen | 90035-08-8 | | x | | | | |
| 104 | Fluazifop-butyl | 69806-50-4 | | | x | | | |
| 105 | Fluazolate | 174514-07-9 | | | | x | | |
| 106 | Flucythrinate | 70124-77-5 | | x | | | x | |
| 107 | Flumetralin | 62924-70-3 | | | | x | | |
| 108 | Flumioxazin | 103361-09-7 | | | x | | | |
| 109 | Fluoroacetamide | 640-19-7 | x | x | | | | |
| 110 | Formaldehyde | 50-00-0 | | | x | | | |
| 111 | Formetanate | 22259-30-9 | | x | | | x | |
| 112 | Furathiocarb | 65907-30-4 | | x | | | | |
| 113 | Glyphosate and its salts | 1071-83-6 69254-40-6 38641-94-0 | | | x | | | |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|--|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| | | 40465-66-5 34494-03-6 81591-81-3 | | | | | | |
| 114 | Halfenprox | 111872-58-3 | | | | x | | |
| 115 | Heptachlor | 76-44-8 | x | | | x | | x |
| 116 | Heptenophos | 23560-59-0 | | x | | | x | |
| 117 | Hexachlorobenzene (HCB) | 118-74-1 | x | x | x | | | x |
| 118 | Hexachlorocyclohexane HCH(Benzene hexachloride) | 608-73-1 | x | | | | x | x |
| 119 | Hexaflumuron | 86479-06-3 | | | x | | | |
| 120 | Imidacloprid | 138261-41-3 | | | | | x | |
| 121 | Ioxynil | 1689-83-4 | | | x | | | |
| 122 | Isopyrazam | 881685-58-1 | | | | x | | |
| 123 | Isoxathion | 18854-01-8 | | x | | | x | |
| 124 | Lambda-cyhalothin | 91465-08-6 | | x (h330) | x | | | |
| 125 | Lead arsenate | 7784-40-9 | | x | | x | | |
| 126 | Leptophos | 21609-90-5 | | | | | | x |
| 127 | Lindane | 58-89-9 | x | | x | | x | |
| 128 | Linuron | 330-55-2 | | | x | | | |
| 129 | Magnesium phosphide | 12057-74-8 | | x | | | | |
| 130 | Maneb | 12427-38-2 | | | x | | | |
| 131 | Mecarbam | 2595-54-2 | | x | | | | |
| 132 | Mercury compounds, including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds | Individual CAS numbers | x | x | | | | |
| 133 | Metam-sodium | 137-42-8 | | | x | | | |
| 134 | Methamidophos | 10265-92-6 | x | x | | | x | |
| 135 | Methidathion | 950-37-8 | | x | | | x | |
| 136 | Methiocarb | 2032-65-7 | | x | | | x | |
| 137 | Methomyl | 16752-77-5 | | x | | | x | |
| 138 | Methoxychlor | 72-43-5 | | | x | | | |
| 139 | Methyl bromide | 74-83-9 | x | | | | | |
| 140 | Metiram | 9006-42-2 | | | x | | | |
| 141 | Metribuzin | 21087-64-9 | | | x | | | |
| 142 | Mevinphos | 7786-34-7 | | x | | | x | |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|---|--|---------------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 143 | Mirex | 2385-85-5 | x | | | x | x | x |
| 144 | Molinate | 2212-67-1 | | | x | | | |
| 145 | Monocrotophos | 6923-22-4 | x | x | | | x | |
| 146 | Nicotine | 54-11-5 | | x | | | | |
| 147 | Nitrobenzene | 98-95-3 | | | x | | | |
| 148 | Nitrofen | 1836-75-5 | | | x | | | x |
| 149 | Octamethylpyrophosphoramide (OMPA) | 152-16-9 | | | | | | x |
| 150 | Omethoate | 1113-02-6 | | x | x | | x | |
| 151 | Oxamyl | 23135-22-0 | x (WHO 1b and h330) | | | | | |
| 152 | Oxydemeton-methyl | 301-12-2 | | x | | | x | |
| 153 | Paraquat (All forms including Paraquat dichloride) | 1910-42-5 | | x | | | | |
| 154 | Parathion | 56-38-2 | x | x | | | x | |
| 155 | Parathion-methyl | 298-00-0 | x | x | | | | |
| 156 | Paris Green (copper acetoarsenite) | 12002-03-8 | | | x | | | |
| 157 | Pentachlorobenzene | 608-93-5 | x | | | | | |
| 158 | Pentachlorophenol (PCP), its salts and esters | 87-86-5 | x | x | x | | | |
| 159 | Phenylmercury acetate | 62-38-4 | | | x | | | |
| 160 | Phorate | 298-02-2 | | x | | | x | |
| 161 | Phosphamidon | 13171-21-6 | x | x | | | x | |
| 162 | Picloram | 1918 02 1 | | | x | | | |
| 163 | PMDS Di(phenylmercuric) dodecanyl succinate | 27236-65-3 | | | x | | | |
| 164 | Polybrominated biphenyls mixture PBB | Separate CAS Nos. are assigned to individual polybrominated biphenyls | | | x | | | |
| 165 | Polychlorinated biphenyls PCB (except mono and dichlorinated) Aroclor | Separate CAS Nos. are assigned to individual polychlorinated biphenyls | x | | | | | x |
| 166 | Polychlorinated Terphenyls (PCTs) | 61788-33-8 | x | | | | | |
| 167 | Potasan | 299-45-6 | | x | | | | |
| 168 | Profoxydim | 139001-49-3 | | | x | | | |
| 169 | Propetamphos | 31218-83-4 | | x | | | | |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|------------------|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 170 | Propylene oxide | 75-56-9 | | | x | | | |
| 171 | Prothiofos | 34643-46-4 | | | | x | | |
| 172 | Pyrazoxon | 108-34-9 | | x | | | | |
| 173 | Pyridalyl | 179101-81-6 | | | | x | | |
| 174 | Quinalphos | 13593-03-8 | | | x | | x | |
| 175 | Quizalofop-p-tefuryl | 119738-06-6 | | | x | | | |
| 176 | Resmethrin | 10453-86-8 | | | x | | x | |
| 177 | Safrole | 94-59-7 | | | x | | | x |
| 178 | Silafluofen | 105024-66-6 | | | x | | x | |
| 179 | Silvex (all forms) | 93-72-1 | | | | | | x |
| 180 | Sodium arsenite (arsenic and its compounds) | 7784-46-5 | | | x | | | |
| 181 | Sodium cyanide | 143-33-9 | | x | | | | |
| 182 | Sodium fluoroacetate (1080) | 62-74-8 | | x | | | | |
| 183 | Strychnine | 57-24-9 | | x | | | | |
| 184 | Sulfotep | 3689-24-5 | | x | | | | |
| 185 | TCMTB | 21564-17-0 | | x | | | | |
| 186 | TDE | 72-54-8, 53-19-0 | | | | | | x |
| 187 | Tebupirimphos (Phostebupirim) | 96182-53-5 | | x | | x | | |
| 188 | Tefluthrin | 79538-32-2 | | x | | | x | |
| 189 | Tepraloxymid | 149979-41-9 | | | x | | | |
| 190 | Terbufos | 13071-79-9 | | x | | | | |
| 191 | Terbutryn | 886-50-0 | | | x | | | |
| 192 | Terpene polychlorinates (Strobane) | 8001-50-1 | | | | x | | x |
| 193 | Tetraethyl lead | 78-00-2 | | | | x | | |
| 194 | Tetramethyl lead | 75-74-1 | | | | x | | |
| 195 | Thallium sulfate | 7446-18-6 | | x | | | | x |
| 196 | Thiamethoxam | 153719-23-4 | | | | | x | |
| 197 | Thiofanox | 39196-18-4 | | x | | | x | |
| 198 | Thiometon | 640-15-3 | | x | | | x | |
| 199 | Thiourea | 62-56-6 | | | x | | | |
| 200 | Thiram | 137-26-8 | x | | x | | | |
| 201 | Tolfenpyrad | 129558-76-5 | | | | x | | |
| 202 | Tolyfluanid | 731-27-1 | | x | | | | |
| 203 | Toxaphene; Camphechlor | 8001-35-2 | x | | | x | x | x |



| Red List (Prohibited List) | | | | | | | | |
|----------------------------|--|-------------|-------------|---------------------|--|-----------------------|---|----------|
| No. | Name of active ingredient (a.i.) of the material | CAS number | Conventions | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services ² | Obsolete |
| 204 | Tri-allate | 2303-17-5 | | | | x | | |
| 205 | Triazophos | 24017-47-8 | | x | | | | |
| 206 | Tributyltin compounds | Various CAS | | | x | | | |
| 207 | Trichlorfon | 52-68-6 | | | x | | x | |
| 208 | Tridemorph | 81412-43-3 | | | x | | | |
| 209 | Trifluralin | 1582-09-8 | | | x | | | |
| 210 | Triforine | 26644-46-2 | | | x | | | |
| 211 | Tris (2,3 - dibromopropyl) phosphate | 126-72-7 | x | | | | | |
| 212 | Vamidothion | 2275-23-2 | | x | | | x | |
| 213 | Vinclozolin | 50471-44-8 | | | x | | | |
| 214 | Vinyl chloride | 75-01-4 | | x | | x | | x |
| 215 | Warfarin* | 81-81-2 | | x | x | | | |
| 216 | Zeta-Cypermethrin | 52315-07-8 | | x | | | x | |
| 217 | Zinc phosphide | 1314-84-7 | | x | | | | |
| 218 | Zineb | 12122-67-7 | | | x | | | |
| 219 | Ziram | 137-30-4 | | x | | | | |
| 220 | Z-Phosphamidon | 23783-98-4 | | x | | | | |

* Rodenticides (only those marked with*) can be used in the premises (buildings) that handle Fairtrade products or around the fields, if used properly in fixed bait-stations to prevent spillage and spoilage. Non-chemical rodent control measures shall be implemented before these rodenticides are used. The bait stations should be monitored regularly to prevent exposure to non-target organisms. As a Red List material, they shall not be used on Fairtrade product or used in ways that results in its contact with a Fairtrade product.



Part 2: Fairtrade International Orange List of Restricted Materials

Producers and traders use the materials in the Orange List on Fairtrade products only under the following conditions:

- Fulfilling the specific conditions of use (see the list below) AND
- Only using a material in the Orange List: i) as part of avoiding pesticide resistance build up in pests, ii) in rotation with less harmful pesticides, iii) as part of Integrated Pest Management (IPM) and iv) including non-chemical control measures; AND
- Developing a plan for reducing/phasing out the use of the materials including information on the type of material (technical name/active ingredient (a.i.), formulation (% of a.i.), commercial name), the quantity used (spray concentration (a.i. /ha or in % or ppm etc.) and total consumed a.i./ha/year), actions taken for reducing/phasing out the material including details of other non-chemical controls which are part of the IPM strategy. The plan is implemented and made available to the Certification Body.

The use of the pesticides in the list will be monitored. Some materials in the list are to be phased out by 30 June 2020 or by 30 June 2022 (see list below). For other materials in the list, decision on whether they will be placed in the list of prohibited materials (Red List) or retained in the Orange List will be taken in the next review of the HML.

The criteria for classifying a material in the Orange List are:

- Hazard to ecosystem services (Highly toxic for bees: only Greenpeace bee toxic 7) OR
- Materials that would be classified in the Red List but are perceived as irreplaceable in the short term as identified in the public consultations held as part of the last review of the materials list, but excludes materials that a) were included in the previous Red List for which a possibility of derogation was not available or b) are classified under conventions, or c) are carcinogenic; OR
- Materials that would be classified in the Yellow List but are identified as materials of high concern to civil society

Specific Conditions / Phase out date to be fulfilled for using certain pesticides in the Orange list of restricted materials

| Condition Set | Details |
|---------------|---|
| a | To be used only for Apiculture |
| b | Not to be used on young plant materials To be used only in greenhouse production OR In open field conditions, it is not used on gregariously flowering melliferous crops, starting one month prior to peak flowering and during flowering period. (e.g. coffee, fruit trees, cashew, almond etc.). The certification body will determine the crops which fall under this type. |
| c | To be used only by professionally trained warehouse staff using proper personal protective equipment and specially designed equipment to ensure hermetic sealing and minimize gas leakages |
| d | To be phased out (for exact date please see column Specific Conditions / Phase out date) |



| Orange List (Restricted List) | | | | | | | |
|-------------------------------|---|--|---------------------|--|-----------------------|------------------------------|--|
| No. | Name of active ingredient of the material | CAS number | High acute toxicity | Long term toxic effect or chronic exposure | Environmental concern | Hazard to ecosystem services | Specific Conditions / (Phase out date) |
| 1 | 2,4-DB | 94-82-6 | | x | | | |
| 2 | Acetamiprid | 135410-20-7 | | | | | |
| 3 | Aluminum phosphide | 20859-73-8 | x (h330) | | | | c |
| 4 | Amisulbrom | 348635-87-0 | | | x | | |
| 5 | Amitraz | 33089-61-1 | | x | | | a |
| 6 | Atrazine | 1912-24-9 | | x | | | |
| 7 | Bifenthrin | 82657-04-3 | | x | | | |
| 8 | Carbaryl | 63-25-2 | | x | | | |
| 9 | Carbendazim | 10605-21-7 | | x | | | |
| 10 | Chlorantranilprole, | 500008-45-7 | | | x | | |
| 11 | Cypermethrin & its alpha and beta isomer | 65731-84-2 67375-30-8 65731-84-2 | | | | x | b |
| 12 | Deltamethrin | 52918-63-5 | | x | | x | b |
| 13 | Dimethoate | 60-51-5 | | x | | | |
| 14 | Epoxiconazole | 133855-98-8 | | x | | | |
| 15 | Etofenprox | 80844-07-1 | | | x | | |
| 16 | Fenitrothion | 122-14-5 | | x | | | |
| 17 | Flufenoxuron | 101463-69-8 | | | x | | |
| 18 | Fipronil | 120068-37-3 | | | | x | b |
| 19 | Flusilazole | 85509-19-9 | | x | | | |
| 20 | Glufosinate ammonium | 77182-82-2 | | x | | | |
| 21 | Lufenuron | 103055-07-8 | | | x | | |
| 22 | Mancozeb | 8018 01 7 | | x | | | |
| 23 | Phosphine | 7803-51-2 | x (h330) | | | | c |
| 24 | Pirimicarb | 23103-98-2 | | | x | | |
| 25 | Procymidone | 32809-16-8 | | x | | | |
| 26 | Propargite | 2312-35-8 | | | x | | |
| 27 | Quinoxifen | 124495-18-7 | | | x | | |
| 28 | Sulfoxaflor | 946578-00-3 | | | | x | b |
| 29 | Thiacloprid | 111988-49-9 | | x | | | b |



Part 3: Fairtrade International Yellow List of Flagged Materials

The materials in this list are hazardous and should be used with caution. No additional conditions are prescribed by Fairtrade International for the use of these materials. The materials in the list can potentially be moved to the Red List (prohibited) or Orange List (restricted) as new information is generated on their hazards and thus it is recommended to limit the use of these materials and phase- them out.

The Criteria for classifying a material in the Yellow List are:

- Long term toxic effect or chronic exposure (Probable Carcinogens) OR
- Environment concern (at least one the following three effects on environment a) Very persistent, b) Very bioaccumulative, c) Very toxic to aquatic organisms; OR
- Hazard to ecosystem services (Highly toxic for bees: excludes Greenpeace bee toxic 7) OR
- Hazardous materials allowed in organic agriculture, irrespective of their nature of hazard

| Yellow List (Flagged List) | | | | | | | |
|----------------------------|---|-------------|------------------|---------------------------|---|-------------------------------|------------------------------------|
| No. | Name of active ingredient of the material | CAS number | Conven- tions | High acute toxicity | Long term toxic effect or chronic exposure | Environ- mental concern | Hazard to ecosystem services |
| 1 | 1,3-dichloropropene | 542-75-6 | | | x | | |
| 2 | Acephate | 30560-19-1 | | | | | x |
| 3 | Acrinathrin | 101007-06-1 | | | | | x |
| 4 | Alanycarb | 83130-01-2 | | | | | x |
| 5 | Anthraquinone | 84-65-1 | | | x | | |
| 6 | Antibiotics (including Amoxicillin) | 26787-78-0 | | | x | | |
| 7 | Azamethiphos | 35575-96-3 | | | | | x |
| 8 | Bendiocarb | 22781-23-3 | | | | | x |
| 9 | Benfuracarb | 82560-54-1 | | | | | x |
| 10 | Bensulide | 741-58-2 | | | | | x |
| 11 | Benthiavalicarb-isopropyl | 177406-68-7 | | | x | | |
| 12 | Bioresmethrin | 28434-01-7 | | | | | x |
| 13 | Borax; disodium tetraborate decahydrate | 1303-96-4 | | | x | | |
| 14 | Boric acid | 10043-35-3 | | | x | | |
| 15 | Butachlor | 23184-66-9 | | | x | | |
| 16 | Butylate | 2008-41-5 | | | x | | |
| 17 | Chinomethionat;Oxythioquinox | 2439 01 2 | | | x | | |
| 18 | Chlorfenapyr | 122453-73-0 | | | | | x |
| 19 | Chloroform | 67-66-3 | | | x | | |
| 20 | Climbazole | 38083-17-9 | | | | | x |
| 21 | Copper (II) hydroxide | 29427-59-2 | | | | x | |



| Yellow List (Flagged List) | | | | | | | |
|----------------------------|---|-------------|------------------|---------------------------|---|-------------------------------|------------------------------------|
| No. | Name of active ingredient of the material | CAS number | Conven- tions | High acute toxicity | Long term toxic effect or chronic exposure | Environ- mental concern | Hazard to ecosystem services |
| 22 | Cyflufenamid | 180409-60-3 | | | x | | |
| 23 | Cyhalothrin (not lambda) | 68085-85-8 | | | | | x |
| 24 | Cyhalothrin, gamma | 76703-62-3 | | | | | x |
| 25 | Daminozide | 1596-84-5 | | | x | | |
| 26 | Diafenthuron | 80060-09-9 | | | | | x |
| 27 | Diazinon | 333-41-5 | | | | | x |
| 28 | Diclofop-methyl | 51338-27-3 | | | x | | |
| 29 | Dimethenamid | 87674-68-8 | | | x | | |
| 30 | Dinotefuran | 165252-70-0 | | | | | x |
| 31 | Diuron | 330-54-1 | | | x | | |
| 32 | Esfenvalerate | 66230-04-4 | | | | | x |
| 33 | Ethirimol | 23947-60-6 | | | | | x |
| 34 | Fenazaquin | 120928-09-8 | | | | | x |
| 35 | Fenoxycarb | 72490-01-8 | | | x | | x |
| 36 | Fenthion | 55-38-9 | | | | | x |
| 37 | Fenvalerate | 51630-58-1 | | | | | x |
| 38 | Fluthiacet-methyl | 117337-19-6 | | | x | | |
| 39 | Folpet | 133-07-3 | | | x | | |
| 40 | Fosthiazate | 98886-44-3 | | | | | x |
| 41 | Furilazole | 121776-33-8 | | | x | | |
| 42 | Haloxypop-methyl; haloxypop | 69806-40-2 | | | x | | |
| 43 | Hexythiazox | 78587-05-0 | | | x | | |
| 44 | Imazalil | 35554-44-0 | | | x | | |
| 45 | Imazethapyr | 81335-77-5 | | | | | x |
| 46 | Imiprothrin | 72963-72-5 | | | | | x |
| 47 | Indoxacarb | 173584-44-6 | | | | | x |
| 48 | Iprodione | 36734-19-7 | | | x | | |
| 49 | Iprovalicarb | 140923-17-7 | | | x | | |
| 50 | Isoxaflutole | 141112-29-0 | | | x | | |
| 51 | Kresoxim-methyl | 143390-89-0 | | | x | | |
| 52 | Malathion | 121-75-5 | | | | | x |



| Yellow List (Flagged List) | | | | | | | |
|----------------------------|---|-------------------|------------------|---------------------------|---|-------------------------------|------------------------------------|
| No. | Name of active ingredient of the material | CAS number | Conven- tions | High acute toxicity | Long term toxic effect or chronic exposure | Environ- mental concern | Hazard to ecosystem services |
| 53 | Mepanipyrim | 110235-47-7 | | | x | | |
| 54 | Metaflumizone | 139968-49-3 | | | | | x |
| 55 | Metam-potassium | 137-41-7 | | | x | | |
| 56 | Methabenzthiazuron | 18691-97-9 | | | | | x |
| 57 | MGK 326 | 136-45-8 | | | x | | |
| 58 | Milbemectin | 51596-10-2 / 11-3 | | | | | x |
| 59 | MON 4660 | 71526-07-3 | | | x | | |
| 60 | Monuron | 150-68-5 | | | x | | |
| 61 | Naled | 300-76-5 | | | | | x |
| 62 | Nitenpyram | 150824-47-8 | | | | | x |
| 63 | Nitrapyrin | 1929-82-4 | | | x | | |
| 64 | Oryzalin | 19044-88-3 | | | x | | |
| 65 | Oxadiazon | 19666-30-9 | | | x | | |
| 66 | Oxyfluorfen | 42874-03-3 | | | x | | |
| 67 | Paraffin oils; mineral oils | 11 separate CAS | | | x | | |
| 68 | Permethrin | 52645-53-1 | | | x | | x |
| 69 | Phenthoate | 2597 03 7 | | | | | x |
| 70 | Phosalone | 2310-17-0 | | | x | | |
| 71 | Phosmet | 732-11-6 | | | | | x |
| 72 | Pirimiphos-methyl | 29232-93-7 | | | | | x |
| 73 | Prallethrin | 23031-36-9 | | | | | x |
| 74 | Profenofos | 41198-08-7 | | | | | x |
| 75 | Propachlor | 1918-16-7 | | | x | | |
| 76 | Propham | 122-42-9 | | | x | | |
| 77 | Propoxur | 114-26-1 | | | x | | x |
| 78 | Propyzamide | 23950-58-5 | | | x | | |
| 79 | Pymetrozine | 123312-89-0 | | | x | | |
| 80 | Pyraclufos | 77458-01-6 | | | | | x |
| 81 | Pyraflufen-ethyl | 129630-19-9 | | | x | | |
| 82 | Pyrazachlor | 6814-58-0 | | | x | | |
| 83 | Pyrazophos | 13457-18-6 | | | | | x |



| Yellow List (Flagged List) | | | | | | | |
|----------------------------|---|-------------|------------------|---------------------------|---|-------------------------------|------------------------------------|
| No. | Name of active ingredient of the material | CAS number | Conven- tions | High acute toxicity | Long term toxic effect or chronic exposure | Environ- mental concern | Hazard to ecosystem services |
| 84 | Pyridaben | 96489-71-3 | | | | | x |
| 85 | Pyridiphenthion | 119-12-0 | | | | | x |
| 86 | Pyrimethanil | 53112-28-0 | | | x | | |
| 87 | Quinoclamine | 2797-51-5 | | | | | x |
| 88 | Quintozene | 82-68-8 | | | x | | |
| 89 | Rotenone | 83-79-4 | | | | | x |
| 90 | Sedaxane | 874967-67-6 | | | x | | |
| 91 | Simazine | 122-34-9 | | | | x | |
| 92 | Sodium dimethyl dithiocarbamate | 128-04-1 | | | x | | |
| 93 | Spinetoram | 935545-74-7 | | | | | x |
| 94 | Spinosad | 168316-95-8 | | | | | x |
| 95 | Spirodiclofen | 148477-71-8 | | | x | | |
| 96 | Tebuconazole | 107534-96-3 | | | x | | |
| 97 | Technazene | 117-18-0 | | | x | | |
| 98 | Temephos | 3383-96-8 | | | | | x |
| 99 | Terrazole; Etridiazole | 2593-15-9 | | | x | | |
| 100 | Tetrachlorvinphos | 22248-79-9 | | | x | | x |
| 101 | Tetraconazole | 112281-77-3 | | | x | | |
| 102 | Tetramethrin | 7696-12-0 | | | | | x |
| 103 | Thiodicarb | 59669-26-0 | | | x | | x |
| 104 | Thiophanate-methyl | 23564-05-8 | | | x | | |
| 105 | Tralomethrin | 66841-25-6 | | | | | x |
| 106 | Triadimenol | 55219-65-3 | | | x | | |
| 107 | Validamycin | 37248-47-8 | | | | | x |
| 108 | XMC | 2655-14-3 | | | | | x |



Glossary

Active ingredient (a.i.): are the chemicals in pesticide products that kill, control, or repel pests. Often, the active ingredients make up a small portion of the whole product. All other ingredients are called "inert ingredients" which are important for product performance and usability.

Bioaccumulation: it refers to the accumulation of substances, such as pesticides, in an organism.

Carcinogen: is any substance, radionuclide, or radiation that is an agent directly involved in causing cancer.

CAS number: A CAS Registry Number, also referred to as CASRN or CAS Number, is a unique numerical identifier assigned by Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific literature.

Endocrine disruptor: are chemicals that, at certain doses, can interfere with endocrine (or hormone) systems.

Environmental Persistence: Property of some organic compounds to be resistant to environmental degradation through chemical, biological, and photolytic processes.

FAO: The Food and Agriculture Organization of the United Nations is an agency of the United Nations that leads international efforts to defeat hunger. (<http://www.fao.org/home/en/>)

GHS: The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is an internationally agreed-upon system, created by the United Nations to replace the various classification and labelling standards used in many countries in their different regulations on hazard classification, by using consistent criteria on a global level.

(http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html)

IARC: The International Agency for Research on Cancer is an intergovernmental agency forming part of the World Health Organization of the United Nations. (<http://www.iarc.fr/>)

IPM: "the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms." (www.fao.org)

Montreal Protocol: The Montreal Protocol on Substances that Deplete the Ozone Layer is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion. (<http://ozone.unep.org>)

Mutagen: is a physical or chemical agent that changes the genetic material thus increases the frequency of permanent alteration of the genetic material of an organism.

Obsolete pesticides: are pesticides that are unfit for further use or for re-conditioning. Obsolescence may arise because a product has been de-registered locally or banned internationally. (IUPAC International Union of Pure and Applied Chemistry)

PAN: Pesticide Action Network (PAN) is an international coalition of around 600 NGOs, citizens' groups, and individuals in about 60 countries and is involved in fighting problems caused by pesticide use, and advocates ecologically sound alternatives. (<http://www.pan-uk.org/>)

Reprotoxic: Reproductive toxicity is a hazard associated with some chemical substances that they will interfere in some way with normal reproduction; such substances are called reprotoxic. It includes adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring.

Rodenticides: are chemicals made and sold for the purpose of killing rodents (colloquially rat poison)



Rotterdam Convention: Formally, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals. The convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans. Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged to make sure that producers within their jurisdiction comply. (<http://www.pic.int>)

Stockholm Convention: Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs). (<http://www.pops.int>)

US EPA: The United States Environmental Protection Agency (EPA or sometimes USEPA) is an agency of the Federal government of the United States which was created for the purpose of protecting human health and the environment. (<https://www3.epa.gov/>)

WHO: The World Health Organization (WHO) is a specialized agency of the United Nations that is concerned with international public health. It was established on 7 April 1948, headquartered in Geneva, Switzerland. (<http://www.who.int/en/>)

Change history

| Version number | Date of publication | Changes |
|-----------------|---------------------|--|
| 01.12.2016_v1.0 | 1.12.2016 | Full review. Name change from Prohibited Materials List to Hazardous Materials List. Name change of Amber List to Yellow List. Removal of derogation upon request for certain chemicals. Addition of Orange List. Revised criteria for HML. Revised list of materials in Red, Yellow and Orange Lists. Glossary of terms added. Inclusion of change history. |
| 01.12.2016_v1.1 | 5.11.2019 | Change of phase out timeline for materials listed in Orange List, group 'b' |
| 01.12.2016_v1.2 | 18.06.2020 | Change of phase out timelines for materials listed in Hazardous Materials List (Orange List) and changes for materials in Yellow List. |
| 01.12.2016_v1.3 | 22.07.2020 | Carbosulfan (CAS Nr.55285-14-8), Dichlorvos; DDVP (CAS Nr.62-73-7) and Fenpropathrin (CAS Nr. 39515-41-8) moved to Red list of prohibited materials from Orange list of restricted materials. |
| 01.12.2016_v1.4 | 04.01.2021 | Acetamiprid is added in the Orange List. Sulfoxaflor (CAS Nr.946578-00-3) and Thiacloprid (CAS Nr. 111988-49-9) moved to Orange list group "b" from Yellow list of flagged materials |



| | | |
|-----------------|------------|---|
| 01.12.2016_v1.5 | 01.07.2022 | <p>The following materials are moved to Red list of prohibited materials from Orange list of restricted materials:</p> <ul style="list-style-type: none">- Abamectin (CAS Nr. 71751-41-2),- Beta – cyfluthrin (CAS Nr. 1897-45-6),- Chlorothalonil (CAS Nr. 68359-37-5),- Chlorpyrifos, Chlorpyrifos-methyl (CAS Nr. 2921-88-2, 5598-13-0),- Clothianidin (CAS Nr. 210880-92)- Glyphosate and its salts (CAS Nr. 1071-83-6, 69254-40-6, 38641-94-0, 40465-66-5, 34494-03-6, 81591-81-3)- Imidacloprid (CAS Nr. 138261-41-3)- Lambda-cyhalothin (CAS Nr. 91465-08-6)- Oxamyl (CAS Nr. 23135-22-0)- Thiamethoxam (CAS Nr. 153719-23-4) |
|-----------------|------------|---|