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| International Union for the Protection of New Varieties of Plants |  |

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| Technical Working Party for Ornamental Plants and Forest Trees  Fiftieth Session Victoria, British Columbia, Canada, September 11 to 15, 2017 | TWO/50/4  Original: English  Date: August 16, 2017 |

upov color groups

Document prepared by an expert from Germany

Disclaimer: this document does not represent UPOV policies or guidance

# EXECUTIVE SUMMARY

The purpose of this document is to present a proposal for the revision of document TGP/14 “Glossary of terms used in UPOV documents”, Section 2: Botanical Terms: Subsection 3: Color: Annex, to replace the current list of UPOV Color Groups by a new list created on the basis of the Sixth Edition of the RHS Colour Chart.

The Technical Working Party for Ornamental Plants and Forest Trees (TWO) is invited to consider whether to propose the revision of the list of UPOV Color Groups in document TGP/14 “Glossary of terms used in UPOV documents”on the basis of the color groups set out in paragraph 8 of this document.

The structure of this document is as follows:

[EXECUTIVE SUMMARY 1](#_Toc489272958)

[Proposal for a revision of the UPOV Color Groups as presented in document TGP/14 “Glossary of Terms used in UPOV Documents” 1](#_Toc489272959)

ANNEX Proposal for the allocation of the Sixth Edition of the RHS Colour Chart to new UPOV Color Groups

# Proposal for a revision of the UPOV Color Groups as presented in document TGP/14 “Glossary of Terms used in UPOV Documents”

At its forty-ninth session, in 2016, the TWO considered document TWO/49/20 “Definition of color groups from RHS colour charts”. The TWO noted that the current UPOV Color Groups are based on the charts of the 1986 Edition of the RHS Colour Chart and that some charts of this edition and later versions have different colors than the same charts in the Sixth Edition (2015).

Therefore, the TWO agreed to request an expert from Germany to create a revised list to replace the current UPOV Color Groups as presented in document TGP/14 “Glossary of terms used in UPOV documents” on the basis of the 2015 Edition of the RHS Colour Chart (see document TWO/49/25 Rev. “Revised Report”, paragraph 60).

Experts from the Netherlands and Germany checked the current UPOV Groups with the Sixth Edition of the RHS Colour Chart and created 72 groups for the 920 patches in order to have a better descriptive color name compared to the current UPOV Groups.

The new grouping is based on the color hue and the color intensity. Some of the larger old groups have been divided into three new groups: e.g. orange was divided into light orange, medium orange and dark orange. For some colors it was not possible to create three new groups because the “light” or “dark” intensities for that color were missing. One new group “pink” has been created and the old groups 22 “dark pink red”, 39 “grey blue” and 49 “green grey” have been deleted.

The proposal is to have the following groups:

| **New Group No** | **New Group Name** |
| --- | --- |
| 1 | white |
| 2 | light green |
| 3 | medium green |
| 4 | dark green |
| 5 | light yellow green |
| 6 | medium yellow green |
| 7 | light grey green |
| 8 | medium grey green |
| 9 | dark grey green |
| 10 | light blue green |
| 11 | medium blue green |
| 12 | dark blue green |
| 13 | light brown green |
| 14 | medium brown green |
| 15 | dark brown green |
| 16 | light yellow |
| 17 | medium yellow |
| 18 | dark yellow |
| 19 | light yellow orange |
| 20 | medium yellow orange |
| 21 | dark yellow orange |
| 22 | light orange |
| 23 | medium orange |
| 24 | dark orange |
| 25 | light orange pink |
| 26 | medium orange pink |
| 27 | light red pink |
| 28 | medium red pink |
| 29 | pink |
| 30 | light blue pink |
| 31 | medium blue pink |
| 32 | dark blue pink |
| 33 | orange red |
| 34 | light red |
| 35 | medium red |
| 36 | dark red |
| 37 | medium purple red |
| 38 | dark purple red |
| 39 | brown red |
| 40 | medium brown purple |
| 41 | dark brown purple |
| 42 | medium purple |
| 43 | dark purple |
| 44 | light violet |
| 45 | medium violet |
| 46 | dark violet |
| 47 | light blue violet |
| 48 | medium blue violet |
| 49 | dark blue violet |
| 50 | light violet blue |
| 51 | medium violet blue |
| 52 | dark violet blue |
| 53 | light blue |
| 54 | medium blue |
| 55 | dark blue |
| 56 | light green blue |
| 57 | medium green blue |
| 58 | dark green blue |
| 59 | light brown |
| 60 | medium brown |
| 61 | dark brown |
| 62 | light yellow brown |
| 63 | medium yellow brown |
| 64 | orange brown |
| 65 | grey brown |
| 66 | light green brown |
| 67 | medium green brown |
| 68 | dark green brown |
| 69 | light grey |
| 70 | medium grey |
| 71 | dark grey |
| 72 | black |

The Annex to this document provides the complete list for every patch of the Sixth Edition of the RHS Colour Chart can be found together with an overview of how the color name would change compared to the current UPOV color name.

When creating the different groups, it was apparent that several color patches could be placed in at least two groups. For example, the darkest patch in light violet could be very likely the lightest patch in medium violet. Color can be defined in terms of three elements: hue (distinguishes the different colors), saturation (the element of color that indicates the purity or grayness of the color) and intensity (how the color is perceived by the eye on a light to dark scale) (see document TGP/14 “Glossary of Terms used in UPOV Documents”, Subsection 3 “Color”). Due to its three dimensional character, color cannot be arranged on a linear scale and therefore it is not possible to create groups in which all color patches are clearly different from all color patches in another group.

It should be emphasized that the purpose of the proposed UPOV Color Groups is to harmonize color names for variety descriptions (see paragraph 1.1 in document TGP/14/3 “Glossary of Terms used in UPOV Documents”, Section 2: Botanical Terms, Subsection 3: Color: Annex).

*The TWO is invited to consider whether to propose the revision of the list of UPOV Color Groups in document TGP/14 “Glossary of Terms used in UPOV Documents” on the basis of the color groups set out in paragraph 8 of this document.*

[Annex follows]

PROPOSAL FOR THE ALLOCATION OF THE SIXTH EDITION OF THE RHS COLOUR CHART   
TO NEW UPOV COLOR GROUPS

| **New  Group No** | **UPOV Color Group** | **RHS No** |
| --- | --- | --- |
|  |  |  |
| 1 | white | 155A |
| 1 | white | 155B |
| 1 | white | 155C |
| 1 | white | 155D |
| 1 | white | 157D |
| 1 | white | N155B |
| 1 | white | N155C |
| 1 | white | N155D |
| 1 | white | NN155A |
| 1 | white | NN155B |
| 1 | white | NN155C |
| 1 | white | NN155D |
| 2 | light green | 130B |
| 2 | light green | 134C |
| 2 | light green | 134D |
| 2 | light green | 135D |
| 2 | light green | 136D |
| 2 | light green | 138C |
| 2 | light green | 138D |
| 2 | light green | 139D |
| 2 | light green | 140C |
| 2 | light green | 140D |
| 2 | light green | 141D |
| 2 | light green | 142A |
| 2 | light green | 142B |
| 2 | light green | 142C |
| 2 | light green | 142D |
| 2 | light green | 143D |
| 2 | light green | 144B |
| 2 | light green | 144C |
| 2 | light green | 144D |
| 2 | light green | 145A |
| 2 | light green | 145B |
| 2 | light green | 145C |
| 2 | light green | 145D |
| 2 | light green | 149A |
| 2 | light green | 149B |
| 2 | light green | 149C |
| 2 | light green | 149D |
| 2 | light green | 151A |
| 2 | light green | 151B |
| 2 | light green | 157A |
| 2 | light green | 157B |
| 2 | light green | 157C |
| 2 | light green | N144A |
| 2 | light green | N144B |
| 2 | light green | N144C |
| 2 | light green | N144D |
| 3 | medium green | 128A |
| 3 | medium green | 129A |
| 3 | medium green | 130A |
| 3 | medium green | 132D |
| 3 | medium green | 134A |
| 3 | medium green | 134B |
| 3 | medium green | 135C |
| 3 | medium green | 140A |
| 3 | medium green | 140B |
| 3 | medium green | 141C |
| 3 | medium green | 143A |
| 3 | medium green | 143B |
| 3 | medium green | 143C |
| 3 | medium green | 144A |
| 3 | medium green | N134C |
| 3 | medium green | N134D |
| 4 | dark green | 131A |
| 4 | dark green | 131B |
| 4 | dark green | 131C |
| 4 | dark green | 131D |
| 4 | dark green | 132A |
| 4 | dark green | 132B |
| 4 | dark green | 132C |
| 4 | dark green | 133A |
| 4 | dark green | 135A |
| 4 | dark green | 135B |
| 4 | dark green | 136A |
| 4 | dark green | 136B |
| 4 | dark green | 137A |
| 4 | dark green | 139A |
| 4 | dark green | 141A |
| 4 | dark green | 141B |
| 4 | dark green | N134A |
| 4 | dark green | N134B |
| 4 | dark green | N138A |
| 4 | dark green | NN137B |
| 4 | dark green | NN137C |
| 5 | light yellow green | 1C |
| 5 | light yellow green | 2C |
| 5 | light yellow green | 154D |
| 6 | medium yellow green | 1A |
| 6 | medium yellow green | 1B |
| 6 | medium yellow green | 150A |
| 6 | medium yellow green | 150B |
| 6 | medium yellow green | 150C |
| 6 | medium yellow green | 151C |
| 6 | medium yellow green | 151D |
| 6 | medium yellow green | 154A |
| 6 | medium yellow green | 154B |
| 6 | medium yellow green | 154C |
| 7 | light grey green | 188D |
| 7 | light grey green | 190D |
| 7 | light grey green | 192A |
| 7 | light grey green | 192B |
| 7 | light grey green | 192C |
| 7 | light grey green | 192D |
| 7 | light grey green | 193C |
| 7 | light grey green | 193D |
| 7 | light grey green | 196D |
| 8 | medium grey green | 188A |
| 8 | medium grey green | 188B |
| 8 | medium grey green | 188C |
| 8 | medium grey green | 189C |
| 8 | medium grey green | 190A |
| 8 | medium grey green | 190B |
| 8 | medium grey green | 190C |
| 8 | medium grey green | 191C |
| 8 | medium grey green | 191D |
| 8 | medium grey green | 194D |
| 8 | medium grey green | 195A |
| 8 | medium grey green | 195B |
| 8 | medium grey green | 195C |
| 8 | medium grey green | 195D |
| 8 | medium grey green | 196A |
| 8 | medium grey green | 196B |
| 8 | medium grey green | 196C |
| 9 | dark grey green | 189B |
| 9 | dark grey green | N189A |
| 9 | dark grey green | N189B |
| 9 | dark grey green | N189C |
| 10 | light blue green | 123A |
| 10 | light blue green | 123B |
| 10 | light blue green | 123C |
| 10 | light blue green | 123D |
| 10 | light blue green | 124C |
| 10 | light blue green | 124D |
| 10 | light blue green | 125D |
| 10 | light blue green | 128D |
| 10 | light blue green | 129D |
| 10 | light blue green | 130C |
| 10 | light blue green | 130D |
| 11 | medium blue green | 124B |
| 11 | medium blue green | 125B |
| 11 | medium blue green | 125C |
| 11 | medium blue green | 126D |
| 11 | medium blue green | 127D |
| 11 | medium blue green | 128B |
| 11 | medium blue green | 128C |
| 11 | medium blue green | 129B |
| 11 | medium blue green | 129C |
| 11 | medium blue green | 133C |
| 11 | medium blue green | 133D |
| 12 | dark blue green | 124A |
| 12 | dark blue green | 125A |
| 12 | dark blue green | 126A |
| 12 | dark blue green | 126B |
| 12 | dark blue green | 126C |
| 12 | dark blue green | 127A |
| 12 | dark blue green | 127B |
| 12 | dark blue green | 127C |
| 12 | dark blue green | 133B |
| 13 | light brown green | 147D |
| 13 | light brown green | 148D |
| 13 | light brown green | 193A |
| 13 | light brown green | 193B |
| 13 | light brown green | 194C |
| 14 | medium brown green | 136C |
| 14 | medium brown green | 137C |
| 14 | medium brown green | 137D |
| 14 | medium brown green | 138A |
| 14 | medium brown green | 138B |
| 14 | medium brown green | 139B |
| 14 | medium brown green | 139C |
| 14 | medium brown green | 146C |
| 14 | medium brown green | 146D |
| 14 | medium brown green | 147B |
| 14 | medium brown green | 147C |
| 14 | medium brown green | 148B |
| 14 | medium brown green | 148C |
| 14 | medium brown green | 191A |
| 14 | medium brown green | 191B |
| 14 | medium brown green | 194A |
| 14 | medium brown green | 194B |
| 14 | medium brown green | N138D |
| 14 | medium brown green | N148A |
| 14 | medium brown green | N148B |
| 14 | medium brown green | N148C |
| 14 | medium brown green | N148D |
| 15 | dark brown green | 137B |
| 15 | dark brown green | 146A |
| 15 | dark brown green | 146B |
| 15 | dark brown green | 147A |
| 15 | dark brown green | 148A |
| 15 | dark brown green | 189A |
| 15 | dark brown green | N138B |
| 15 | dark brown green | N138C |
| 15 | dark brown green | NN137A |
| 15 | dark brown green | NN137D |
| 16 | light yellow | 1D |
| 16 | light yellow | 2D |
| 16 | light yellow | 3D |
| 16 | light yellow | 4C |
| 16 | light yellow | 4D |
| 16 | light yellow | 5D |
| 16 | light yellow | 6D |
| 16 | light yellow | 8C |
| 16 | light yellow | 8D |
| 16 | light yellow | 9D |
| 16 | light yellow | 10B |
| 16 | light yellow | 10C |
| 16 | light yellow | 10D |
| 16 | light yellow | 11B |
| 16 | light yellow | 11C |
| 16 | light yellow | 12C |
| 16 | light yellow | 12D |
| 16 | light yellow | 13D |
| 16 | light yellow | 14D |
| 16 | light yellow | 15D |
| 16 | light yellow | 16D |
| 16 | light yellow | 150D |
| 17 | medium yellow | 2A |
| 17 | medium yellow | 2B |
| 17 | medium yellow | 3A |
| 17 | medium yellow | 3B |
| 17 | medium yellow | 3C |
| 17 | medium yellow | 4A |
| 17 | medium yellow | 4B |
| 17 | medium yellow | 5A |
| 17 | medium yellow | 5B |
| 17 | medium yellow | 5C |
| 17 | medium yellow | 6A |
| 17 | medium yellow | 6B |
| 17 | medium yellow | 6C |
| 17 | medium yellow | 7A |
| 17 | medium yellow | 7B |
| 17 | medium yellow | 7C |
| 17 | medium yellow | 7D |
| 17 | medium yellow | 8A |
| 17 | medium yellow | 8B |
| 17 | medium yellow | 9A |
| 17 | medium yellow | 9B |
| 17 | medium yellow | 9C |
| 17 | medium yellow | 10A |
| 17 | medium yellow | 12A |
| 17 | medium yellow | 12B |
| 18 | dark yellow | 13A |
| 18 | dark yellow | 14A |
| 18 | dark yellow | 14B |
| 18 | dark yellow | 15A |
| 19 | light yellow orange | 11D |
| 19 | light yellow orange | 18B |
| 19 | light yellow orange | 18C |
| 19 | light yellow orange | 18D |
| 19 | light yellow orange | 19B |
| 19 | light yellow orange | 19C |
| 19 | light yellow orange | 19D |
| 19 | light yellow orange | 20C |
| 19 | light yellow orange | 20D |
| 19 | light yellow orange | 22D |
| 19 | light yellow orange | 23D |
| 19 | light yellow orange | 158A |
| 19 | light yellow orange | 158B |
| 19 | light yellow orange | 158C |
| 19 | light yellow orange | 158D |
| 19 | light yellow orange | 159A |
| 19 | light yellow orange | 159B |
| 19 | light yellow orange | 159C |
| 19 | light yellow orange | 159D |
| 20 | medium yellow orange | 11A |
| 20 | medium yellow orange | 13B |
| 20 | medium yellow orange | 13C |
| 20 | medium yellow orange | 14C |
| 20 | medium yellow orange | 15B |
| 20 | medium yellow orange | 15C |
| 20 | medium yellow orange | 16A |
| 20 | medium yellow orange | 16B |
| 20 | medium yellow orange | 16C |
| 20 | medium yellow orange | 17A |
| 20 | medium yellow orange | 17B |
| 20 | medium yellow orange | 17C |
| 20 | medium yellow orange | 17D |
| 20 | medium yellow orange | 18A |
| 20 | medium yellow orange | 19A |
| 20 | medium yellow orange | 20A |
| 20 | medium yellow orange | 20B |
| 20 | medium yellow orange | 21A |
| 20 | medium yellow orange | 21B |
| 20 | medium yellow orange | 21C |
| 20 | medium yellow orange | 21D |
| 20 | medium yellow orange | 22B |
| 20 | medium yellow orange | 22C |
| 20 | medium yellow orange | 23A |
| 20 | medium yellow orange | 23B |
| 20 | medium yellow orange | 23C |
| 20 | medium yellow orange | N25D |
| 21 | dark yellow orange | 22A |
| 21 | dark yellow orange | N163C |
| 21 | dark yellow orange | N163D |
| 22 | light orange | 24B |
| 22 | light orange | 24C |
| 22 | light orange | 24D |
| 22 | light orange | 25C |
| 22 | light orange | 25D |
| 22 | light orange | 26C |
| 22 | light orange | 26D |
| 22 | light orange | 28C |
| 22 | light orange | 28D |
| 22 | light orange | 29B |
| 23 | medium orange | 24A |
| 23 | medium orange | 25A |
| 23 | medium orange | 25B |
| 23 | medium orange | 26A |
| 23 | medium orange | 26B |
| 23 | medium orange | 29A |
| 23 | medium orange | 30D |
| 23 | medium orange | 32C |
| 23 | medium orange | 33C |
| 23 | medium orange | N25C |
| 24 | dark orange | 28A |
| 24 | dark orange | 28B |
| 24 | dark orange | 30C |
| 24 | dark orange | 31B |
| 24 | dark orange | N25A |
| 24 | dark orange | N25B |
| 24 | dark orange | N30D |
| 25 | light orange pink | 27A |
| 25 | light orange pink | 27B |
| 25 | light orange pink | 27C |
| 25 | light orange pink | 27D |
| 25 | light orange pink | 29C |
| 25 | light orange pink | 29D |
| 26 | medium orange pink | 31C |
| 26 | medium orange pink | 31D |
| 26 | medium orange pink | 32D |
| 26 | medium orange pink | 33D |
| 26 | medium orange pink | 35C |
| 26 | medium orange pink | 37A |
| 26 | medium orange pink | 170D |
| 26 | medium orange pink | 173D |
| 26 | medium orange pink | 179C |
| 26 | medium orange pink | 179D |
| 26 | medium orange pink | N170C |
| 26 | medium orange pink | N170D |
| 27 | light red pink | 35D |
| 27 | light red pink | 36A |
| 27 | light red pink | 36B |
| 27 | light red pink | 36C |
| 27 | light red pink | 36D |
| 27 | light red pink | 37D |
| 27 | light red pink | 38B |
| 27 | light red pink | 38C |
| 27 | light red pink | 38D |
| 27 | light red pink | 39C |
| 27 | light red pink | 39D |
| 27 | light red pink | 49B |
| 27 | light red pink | 49C |
| 27 | light red pink | 49D |
| 27 | light red pink | 50D |
| 28 | red pink | 39A |
| 28 | red pink | 43C |
| 28 | red pink | 45D |
| 28 | red pink | 46D |
| 28 | red pink | 47C |
| 28 | red pink | 47D |
| 28 | red pink | 48A |
| 28 | red pink | 48B |
| 28 | red pink | 50B |
| 28 | red pink | 51A |
| 28 | red pink | 51B |
| 28 | red pink | 51C |
| 28 | red pink | 52A |
| 28 | red pink | 52B |
| 28 | red pink | 53C |
| 28 | red pink | 53D |
| 28 | red pink | N34C |
| 28 | red pink | N45D |
| 29 | pink | 37B |
| 29 | pink | 37C |
| 29 | pink | 38A |
| 29 | pink | 39B |
| 29 | pink | 41D |
| 29 | pink | 43D |
| 29 | pink | 44D |
| 29 | pink | 48C |
| 29 | pink | 48D |
| 29 | pink | 49A |
| 29 | pink | 50C |
| 29 | pink | 51D |
| 29 | pink | 52C |
| 29 | pink | 52D |
| 30 | light blue pink | 54D |
| 30 | light blue pink | 55C |
| 30 | light blue pink | 55D |
| 30 | light blue pink | 56A |
| 30 | light blue pink | 56B |
| 30 | light blue pink | 56C |
| 30 | light blue pink | 56D |
| 30 | light blue pink | 62C |
| 30 | light blue pink | 62D |
| 30 | light blue pink | 63D |
| 30 | light blue pink | 65B |
| 30 | light blue pink | 65C |
| 30 | light blue pink | 65D |
| 30 | light blue pink | 68D |
| 30 | light blue pink | 69A |
| 30 | light blue pink | 69B |
| 30 | light blue pink | 69C |
| 30 | light blue pink | 69D |
| 30 | light blue pink | 73D |
| 30 | light blue pink | 75D |
| 30 | light blue pink | 76D |
| 31 | medium blue pink | 54C |
| 31 | medium blue pink | 55B |
| 31 | medium blue pink | 58D |
| 31 | medium blue pink | 61D |
| 31 | medium blue pink | 62A |
| 31 | medium blue pink | 62B |
| 31 | medium blue pink | 63C |
| 31 | medium blue pink | 64D |
| 31 | medium blue pink | 65A |
| 31 | medium blue pink | 67D |
| 31 | medium blue pink | 68B |
| 31 | medium blue pink | 68C |
| 31 | medium blue pink | 70D |
| 31 | medium blue pink | 73B |
| 31 | medium blue pink | 73C |
| 31 | medium blue pink | 186D |
| 31 | medium blue pink | N57D |
| 31 | medium blue pink | N66D |
| 32 | dark blue pink | 63B |
| 32 | dark blue pink | 64C |
| 32 | dark blue pink | 67B |
| 32 | dark blue pink | 67C |
| 32 | dark blue pink | 68A |
| 32 | dark blue pink | 70C |
| 32 | dark blue pink | 72C |
| 32 | dark blue pink | 72D |
| 32 | dark blue pink | 73A |
| 32 | dark blue pink | 186C |
| 32 | dark blue pink | N66C |
| 32 | dark blue pink | N74C |
| 32 | dark blue pink | N74D |
| 32 | dark blue pink | NN74D |
| 33 | orange red | 30A |
| 33 | orange red | 30B |
| 33 | orange red | 31A |
| 33 | orange red | 32A |
| 33 | orange red | 32B |
| 33 | orange red | 33B |
| 33 | orange red | 34B |
| 33 | orange red | 34C |
| 33 | orange red | 35A |
| 33 | orange red | 35B |
| 33 | orange red | 40C |
| 33 | orange red | 40D |
| 33 | orange red | 41B |
| 33 | orange red | 41C |
| 33 | orange red | 42D |
| 33 | orange red | 169A |
| 33 | orange red | N30B |
| 33 | orange red | N30C |
| 33 | orange red | N34D |
| 34 | light red | 33A |
| 34 | light red | 40A |
| 34 | light red | 40B |
| 34 | light red | 41A |
| 34 | light red | 44C |
| 34 | light red | 43B |
| 34 | light red | N30A |
| 35 | medium red | 34A |
| 35 | medium red | 42B |
| 35 | medium red | 42C |
| 35 | medium red | 43A |
| 35 | medium red | 44A |
| 35 | medium red | 44B |
| 35 | medium red | 45C |
| 35 | medium red | 46C |
| 35 | medium red | 47B |
| 35 | medium red | 50A |
| 35 | medium red | N34B |
| 36 | dark red | 42A |
| 36 | dark red | 45A |
| 36 | dark red | 45B |
| 36 | dark red | 46B |
| 36 | dark red | 47A |
| 36 | dark red | 53B |
| 36 | dark red | N34A |
| 36 | dark red | N45A |
| 36 | dark red | N45B |
| 36 | dark red | N45C |
| 37 | medium purple red | 54A |
| 37 | medium purple red | 54B |
| 37 | medium purple red | 55A |
| 37 | medium purple red | 58B |
| 37 | medium purple red | 58C |
| 37 | medium purple red | 59D |
| 37 | medium purple red | 60D |
| 37 | medium purple red | 61C |
| 37 | medium purple red | 63A |
| 37 | medium purple red | N57A |
| 37 | medium purple red | N57B |
| 37 | medium purple red | N57C |
| 37 | medium purple red | N66A |
| 37 | medium purple red | N66B |
| 38 | dark purple red | 46A |
| 38 | dark purple red | 53A |
| 38 | dark purple red | 59A |
| 38 | dark purple red | 59B |
| 38 | dark purple red | 60A |
| 38 | dark purple red | 60B |
| 38 | dark purple red | 185A |
| 38 | dark purple red | 187B |
| 38 | dark purple red | 187C |
| 38 | dark purple red | 187D |
| 38 | dark purple red | N186D |
| 39 | brown red | 178B |
| 39 | brown red | 178C |
| 39 | brown red | 178D |
| 39 | brown red | 179A |
| 39 | brown red | 179B |
| 39 | brown red | 180A |
| 39 | brown red | 180B |
| 39 | brown red | 180C |
| 39 | brown red | 180D |
| 39 | brown red | 181B |
| 39 | brown red | 181C |
| 39 | brown red | 181D |
| 39 | brown red | 182B |
| 39 | brown red | 182C |
| 39 | brown red | 182D |
| 40 | medium brown purple | 181A |
| 40 | medium brown purple | 182A |
| 40 | medium brown purple | 183D |
| 40 | medium brown purple | 184B |
| 40 | medium brown purple | 184C |
| 40 | medium brown purple | 184D |
| 40 | medium brown purple | 185B |
| 40 | medium brown purple | 185C |
| 40 | medium brown purple | 185D |
| 40 | medium brown purple | 186A |
| 40 | medium brown purple | 186B |
| 41 | dark brown purple | 178A |
| 41 | dark brown purple | 183A |
| 41 | dark brown purple | 183B |
| 41 | dark brown purple | 183C |
| 41 | dark brown purple | 184A |
| 41 | dark brown purple | N186C |
| 42 | medium purple | 61B |
| 42 | medium purple | 64B |
| 42 | medium purple | 67A |
| 42 | medium purple | 70B |
| 42 | medium purple | 71B |
| 42 | medium purple | 71C |
| 42 | medium purple | 71D |
| 42 | medium purple | N74A |
| 42 | medium purple | N74B |
| 42 | medium purple | NN74A |
| 42 | medium purple | NN74B |
| 42 | medium purple | NN74C |
| 42 | medium purple | NN78A |
| 42 | medium purple | NN78B |
| 42 | medium purple | NN78C |
| 42 | medium purple | NN78D |
| 43 | dark purple | 58A |
| 43 | dark purple | 59C |
| 43 | dark purple | 60C |
| 43 | dark purple | 61A |
| 43 | dark purple | 64A |
| 43 | dark purple | 70A |
| 43 | dark purple | 71A |
| 43 | dark purple | 72A |
| 43 | dark purple | N77B |
| 43 | dark purple | N79A |
| 43 | dark purple | N79B |
| 43 | dark purple | N79C |
| 44 | light violet | 75A |
| 44 | light violet | 75B |
| 44 | light violet | 75C |
| 44 | light violet | 76A |
| 44 | light violet | 76B |
| 44 | light violet | 76C |
| 44 | light violet | 77C |
| 44 | light violet | 77D |
| 44 | light violet | 84B |
| 44 | light violet | 84C |
| 44 | light violet | 84D |
| 44 | light violet | N75A |
| 44 | light violet | N75B |
| 44 | light violet | N75C |
| 44 | light violet | N75D |
| 44 | light violet | N80C |
| 44 | light violet | N80D |
| 44 | light violet | N81D |
| 45 | medium violet | 72B |
| 45 | medium violet | 77B |
| 45 | medium violet | 84A |
| 45 | medium violet | N77D |
| 45 | medium violet | N78A |
| 45 | medium violet | N78B |
| 45 | medium violet | N78C |
| 45 | medium violet | N78D |
| 45 | medium violet | N79D |
| 45 | medium violet | N80A |
| 45 | medium violet | N80B |
| 45 | medium violet | N81A |
| 45 | medium violet | N81B |
| 45 | medium violet | N81C |
| 45 | medium violet | N82A |
| 46 | dark violet | 77A |
| 46 | dark violet | 79A |
| 46 | dark violet | 79B |
| 46 | dark violet | 79C |
| 46 | dark violet | 79D |
| 46 | dark violet | 83A |
| 46 | dark violet | 83B |
| 46 | dark violet | 86A |
| 46 | dark violet | N77C |
| 46 | dark violet | N92A |
| 46 | dark violet | N92D |
| 47 | light blue violet | 85B |
| 47 | light blue violet | 85C |
| 47 | light blue violet | 85D |
| 47 | light blue violet | 91C |
| 47 | light blue violet | 91D |
| 47 | light blue violet | 92D |
| 48 | medium blue violet | 83D |
| 48 | medium blue violet | 85A |
| 48 | medium blue violet | 86C |
| 48 | medium blue violet | 86D |
| 48 | medium blue violet | 90C |
| 48 | medium blue violet | 90D |
| 48 | medium blue violet | N82B |
| 48 | medium blue violet | N82C |
| 48 | medium blue violet | N82D |
| 48 | medium blue violet | N87A |
| 48 | medium blue violet | N87B |
| 48 | medium blue violet | N87C |
| 48 | medium blue violet | N87D |
| 48 | medium blue violet | N88C |
| 48 | medium blue violet | N88D |
| 49 | dark blue violet | 83C |
| 49 | dark blue violet | 86B |
| 49 | dark blue violet | 90A |
| 49 | dark blue violet | 90B |
| 49 | dark blue violet | 93B |
| 49 | dark blue violet | 93C |
| 49 | dark blue violet | N88A |
| 49 | dark blue violet | N88B |
| 49 | dark blue violet | N89C |
| 49 | dark blue violet | N89D |
| 50 | light violet blue | 91A |
| 50 | light violet blue | 91B |
| 50 | light violet blue | 92B |
| 50 | light violet blue | 92C |
| 50 | light violet blue | 93D |
| 50 | light violet blue | 94D |
| 50 | light violet blue | 97B |
| 51 | medium violet blue | 92A |
| 51 | medium violet blue | 94B |
| 51 | medium violet blue | 94C |
| 51 | medium violet blue | 95C |
| 51 | medium violet blue | 96B |
| 51 | medium violet blue | 96C |
| 51 | medium violet blue | 96D |
| 51 | medium violet blue | 97A |
| 51 | medium violet blue | N95C |
| 51 | medium violet blue | N95D |
| 52 | dark violet blue | 93A |
| 52 | dark violet blue | 94A |
| 52 | dark violet blue | 95A |
| 52 | dark violet blue | 95B |
| 52 | dark violet blue | 96A |
| 52 | dark violet blue | N89A |
| 52 | dark violet blue | N89B |
| 52 | dark violet blue | N92B |
| 52 | dark violet blue | N92C |
| 52 | dark violet blue | N95A |
| 52 | dark violet blue | N95B |
| 53 | light blue | 95D |
| 53 | light blue | 100D |
| 53 | light blue | 101D |
| 53 | light blue | 104D |
| 53 | light blue | 106B |
| 53 | light blue | 106C |
| 53 | light blue | 107C |
| 53 | light blue | 107D |
| 53 | light blue | N109D |
| 54 | medium blue | 98A |
| 54 | medium blue | 98B |
| 54 | medium blue | 98C |
| 54 | medium blue | 98D |
| 54 | medium blue | 99C |
| 54 | medium blue | 99D |
| 54 | medium blue | 100A |
| 54 | medium blue | 100B |
| 54 | medium blue | 100C |
| 54 | medium blue | 101A |
| 54 | medium blue | 101B |
| 54 | medium blue | 101C |
| 54 | medium blue | 102C |
| 54 | medium blue | 102D |
| 54 | medium blue | 103D |
| 54 | medium blue | 104A |
| 54 | medium blue | 104B |
| 54 | medium blue | 104C |
| 54 | medium blue | 105B |
| 54 | medium blue | 105C |
| 54 | medium blue | 105D |
| 54 | medium blue | 106A |
| 54 | medium blue | 107A |
| 54 | medium blue | 107B |
| 54 | medium blue | 110A |
| 54 | medium blue | 110B |
| 54 | medium blue | N109A |
| 54 | medium blue | N109B |
| 54 | medium blue | N109C |
| 55 | dark blue | 99A |
| 55 | dark blue | 99B |
| 55 | dark blue | 102A |
| 55 | dark blue | 102B |
| 55 | dark blue | 103A |
| 55 | dark blue | 103B |
| 55 | dark blue | 103C |
| 55 | dark blue | 105A |
| 56 | light green blue | 106D |
| 56 | light green blue | 108A |
| 56 | light green blue | 108B |
| 56 | light green blue | 108C |
| 56 | light green blue | 108D |
| 56 | light green blue | 112A |
| 56 | light green blue | 112B |
| 56 | light green blue | 112C |
| 56 | light green blue | 112D |
| 56 | light green blue | 113D |
| 56 | light green blue | 117C |
| 56 | light green blue | 117D |
| 56 | light green blue | 118D |
| 56 | light green blue | 120D |
| 56 | light green blue | 121D |
| 56 | light green blue | 122D |
| 57 | medium green blue | 110C |
| 57 | medium green blue | 110D |
| 57 | medium green blue | 111A |
| 57 | medium green blue | 111B |
| 57 | medium green blue | 111C |
| 57 | medium green blue | 111D |
| 57 | medium green blue | 113B |
| 57 | medium green blue | 113C |
| 57 | medium green blue | 115A |
| 57 | medium green blue | 115B |
| 57 | medium green blue | 115C |
| 57 | medium green blue | 115D |
| 57 | medium green blue | 116D |
| 57 | medium green blue | 117A |
| 57 | medium green blue | 117B |
| 57 | medium green blue | 118A |
| 57 | medium green blue | 118B |
| 57 | medium green blue | 118C |
| 57 | medium green blue | 119A |
| 57 | medium green blue | 119B |
| 57 | medium green blue | 119C |
| 57 | medium green blue | 119D |
| 57 | medium green blue | 120A |
| 57 | medium green blue | 120B |
| 57 | medium green blue | 120C |
| 57 | medium green blue | 121A |
| 57 | medium green blue | 121B |
| 57 | medium green blue | 121C |
| 57 | medium green blue | 122A |
| 57 | medium green blue | 122B |
| 57 | medium green blue | 122C |
| 58 | dark green blue | 113A |
| 58 | dark green blue | 114A |
| 58 | dark green blue | 114B |
| 58 | dark green blue | 114C |
| 58 | dark green blue | 114D |
| 58 | dark green blue | 116A |
| 58 | dark green blue | 116B |
| 58 | dark green blue | 116C |
| 59 | light brown | 164A |
| 59 | light brown | 164D |
| 59 | light brown | 165B |
| 59 | light brown | 165D |
| 59 | light brown | 166D |
| 59 | light brown | 167A |
| 59 | light brown | 167B |
| 59 | light brown | 167C |
| 59 | light brown | 167D |
| 59 | light brown | 168D |
| 59 | light brown | 174D |
| 59 | light brown | N167A |
| 59 | light brown | N167C |
| 59 | light brown | N167D |
| 59 | light brown | N170B |
| 59 | light brown | N172D |
| 60 | medium brown | 165A |
| 60 | medium brown | 166B |
| 60 | medium brown | 166C |
| 60 | medium brown | 172A |
| 60 | medium brown | 172B |
| 60 | medium brown | 173A |
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| 60 | medium brown | 174A |
| 60 | medium brown | 174B |
| 60 | medium brown | 174C |
| 60 | medium brown | 175A |
| 60 | medium brown | 175B |
| 60 | medium brown | 175C |
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| 60 | medium brown | 176A |
| 60 | medium brown | 176B |
| 60 | medium brown | 176C |
| 60 | medium brown | 176D |
| 60 | medium brown | 177B |
| 60 | medium brown | 177C |
| 60 | medium brown | 177D |
| 60 | medium bown | N167B |
| 60 | medium brown | N170A |
| 61 | dark brown | 166A |
| 61 | dark brown | 177A |
| 61 | dark brown | 187A |
| 61 | dark brown | 200A |
| 61 | dark brown | 200B |
| 61 | dark brown | 200C |
| 61 | dark brown | 200D |
| 61 | dark brown | N77A |
| 61 | dark brown | N199B |
| 61 | dark brown | N200A |
| 62 | light yellow brown | 161A |
| 62 | light yellow brown | 161B |
| 62 | light yellow brown | 161C |
| 62 | light yellow brown | 161D |
| 62 | light yellow brown | 162A |
| 62 | light yellow brown | 162B |
| 62 | light yellow brown | 162C |
| 62 | light yellow brown | 162D |
| 62 | light yellow brown | 163C |
| 62 | light yellow brown | 163D |
| 63 | medium yellow brown | 163A |
| 63 | medium yellow brown | 163B |
| 63 | medium yellow brown | 164B |
| 63 | medium yellow brown | 164C |
| 63 | medium yellow brown | 165C |
| 64 | orange brown | 34D |
| 64 | orange brown | 168A |
| 64 | orange brown | 168B |
| 64 | orange brown | 168C |
| 64 | orange brown | 169B |
| 64 | orange brown | 169C |
| 64 | orange brown | 169D |
| 64 | orange brown | 170A |
| 64 | orange brown | 170B |
| 64 | orange brown | 170C |
| 64 | orange brown | 171A |
| 64 | orange brown | 171B |
| 64 | orange brown | 171C |
| 64 | orange brown | 171D |
| 64 | orange brown | 172C |
| 64 | orange brown | 172D |
| 64 | orange brown | 173B |
| 64 | orange brown | N163A |
| 64 | orange brown | N163B |
| 64 | orange brown | N172A |
| 64 | orange brown | N172B |
| 64 | orange brown | N172C |
| 65 | grey brown | 199A |
| 65 | grey brown | 199B |
| 65 | grey brown | 199C |
| 65 | grey brown | 199D |
| 65 | grey brown | N199A |
| 65 | grey brown | N199C |
| 65 | grey brown | N199D |
| 66 | light green brown | 160A |
| 66 | light green brown | 160B |
| 66 | light green brown | 160C |
| 66 | light green brown | 160D |
| 67 | medium green brown | 153B |
| 67 | medium green brown | 153C |
| 67 | medium green brown | 153D |
| 68 | dark green brown | 152A |
| 68 | dark green brown | 152B |
| 68 | dark green brown | 152C |
| 68 | dark green brown | 152D |
| 68 | dark green brown | 153A |
| 69 | light grey | 97C |
| 69 | light grey | 97D |
| 69 | light grey | 156B |
| 69 | light grey | 156C |
| 69 | light grey | 156D |
| 69 | light grey | 189D |
| 69 | light grey | 202D |
| 69 | light grey | N155A |
| 70 | medium grey | 156A |
| 70 | medium grey | 197D |
| 70 | medium grey | 198A |
| 70 | medium grey | 198B |
| 70 | medium grey | 198C |
| 70 | medium grey | 198D |
| 70 | medium grey | N189D |
| 70 | medium grey | N187D |
| 70 | medium grey | N200D |
| 71 | dark grey | 197A |
| 71 | dark grey | 197B |
| 71 | dark grey | 197C |
| 71 | dark grey | 201A |
| 71 | dark grey | 201B |
| 71 | dark grey | 201C |
| 71 | dark grey | 201D |
| 71 | dark grey | 202B |
| 71 | dark grey | 202C |
| 71 | dark grey | N187B |
| 71 | dark grey | N187C |
| 71 | dark grey | N200B |
| 71 | dark grey | N200C |
| 72 | black | 202A |
| 72 | black | 203A |
| 72 | black | 203B |
| 72 | black | 203C |
| 72 | black | 203D |
| 72 | black | N186A |
| 72 | black | N186B |
| 72 | black | N187A |

[End of Annex and of document]