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**Standard Database Format
(SDF)
version 3.6**

Standard Database Format (SDF) version 3.6

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**Standard Database Format
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1 Introduction

The Standard Database Format (SDF) version 3.2 is designed to define a set of formulas that are to be imported/converted to either PrismaPro or Prisma respectively. Please note that if the SDF file created is to be imported into both Prisma and PrismaPro that the formula data must meet all the restrictions such that the Prisma database can be created. Included with this document should be an Excel file (FMFormat.xls) with the format already setup, this Excel file includes a validation program with must be run to ensure that the data meets the restrictions defined. Once the validation is complete the SDF file can be created.

2 Format

2.1 Definition of a standard formula

A standard formula is defined to have the following fields:

<i>Field</i>	<i>Description</i>
Collection name	The name identifying the collection to which the formula belongs
Product name	The name identifying a product
Colour-name	The name identifying the formula within a collection
Based on amount	The amount of base/prefilled component to which the colourants must be added to achieve the correct colour.
A base/prefilled component	The name identifying the component that is not dispensed but is already in the can
a number of colourants and their respective quantities	The set of colourants and their respective quantities that must be dispensed into the specified base (base amount specified by based on amount) to achieve the required colour.

To ensure that each formula is unique (necessary for searching for and selecting a particular formula) the combination of collection, product and colour-name must be unique.

2.2 Required data

The following tables must be filled in:

<i>Collection</i>	<i>Product-Code</i>	<i>Colour Name</i>	<i>Based on Cansize</i>	<i>Base</i>	<i>C #1</i>	<i>Q #1</i>	<i>...</i>	<i>C #6</i>	<i>Q #6</i>

Table 1: Formula Table

C = Colourant, Q = Quantity



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Example:

 Formula Table 				Base	Colourant 1	Quantity 1	Colourant 2	Quantity 2	Colourant 3	Quantity 3	Colourant 4	Quantity 4	Colourant 5	Quantity 5	Colourant 6	Quantity 6
Collection	Product Code	Colour Name	Based on Cansize	Base												
RAL	A	101	1 lt	P	A	8	B	4.62	C	6.7						
RAL	AB	102	1 lt	EP	B	3	G	2.6								
RAL	ABs	103	10 lt	D	C	3	D	4.6								
NCS	C3	104	1 lt	ED	A	2	F	4.5								
NCS	ABC3s	105	1 lt	EP	B	4.7	E	5	F	4.3						
NCS	BC3	106	1 lt	D	B	5.6										
House	Bs	107	1 lt	ED	F	8										

In the Formula Table all but the Products, Bases and Cansizes can be entered for a recipe. Each Product has Bases and Cansizes associated with it and can be linked with one or more formulas, this information is stored in the Product Table. In this table the Product-Base and Product-Cansize associations are established. Note that the Product Table is used to list all the Products in your inventory and the Bases and Cansizes in which they exist. Each Product is then assigned a Product-Code that is referenced to by the Formula table.

Product-Code	Product Name	Cansize #1	...	Cansize #n		BC #1=BN #1	...	BC #m=BN #m
<i>FILL</i>								

Table 2: Product Table

BC = Base Code
 BN = Base Name

Example:



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Product Table									
Product Code	Product Name	1 lt	2 lt	3 lt		P=Pale	EP=Extra Pale	D=Deep	ED=Extra Deep
A	Egg shell	T				1	1	1	
B	Primer		T			1	1	0.8	1
C3	Floor Paint	T		T			1	1	1
D	Wall Paint		T	T			1		
s	Gloss	T					1	1	1
Fill						90	90	90	95

Products are linked with Bases by indicating a factor in the respective cell, if the Product/Base combination does not exist then that cell must be left empty. Factors are applicable when all the Colourant Quantities in a formula must be adjusted by relative value due to the properties of a specific base. When a factor is given the quantities in the Formula Table will be multiplied by the factor for that Product-Base combination. Note that a factor of one indicates that no adjustment to the formula is necessary. A single Base Code can refer to several Base Names. When a single Base Code refers to several Base Names then only one of the respective columns must contain a value when the product/base combination exists.

Cansizes are associated with Products by placing a 'T' in the corresponding cell. Products can be associated with more than one cansize.

The *FILL* row: If you would like to specify the prefilled percentage of a base then this can be done in the *FILL* row. This row is optional and is inserted after leaving a blank line below the last Product Name. The values are entered as percentages, a value between 1 and 100, and cannot contain decimals. If no values are entered then a default of 90% will be used.

The cansizes and bases columns are specific to your inventory and you must insert new columns where necessary (and remove those that are unnecessary). There must be an empty column between the Cansize and Base definitions.

The column headings "Cansize #x" and "BC #x=BN #x" are variable and the following restrictions apply:

Cansize #x: must be a decimal number followed by a space and then a valid unit. Valid units are KG, GR, MG, LT and ML (these units are not case sensitive).

BC #x=BN #x: Must be a string. The Base Code is the code used in the Formula Table (Base Column) to indicate the formula's base paint. The Base Code may not be more than 15 characters in length. The Base Name is specified to help make the Base Code more meaningful and must be given, it is the text shown in Prisma as the base name and in PrismaPro as the prefilled component name.

Colourant Code	Colourant Name	Density



Table 3: Colourant Table

Example:

Colourant Table						
Colourant Code	Colourant Name	Density	R	G	B	Color Indication
YG	YG	2.09712	255	0	0	
BW	BW	1.311	0	255	0	
CW	CW	1.840	0	0	255	
DW	DW	1.430	255	255	0	
EW	EW	1.338	0	255	255	
FW	FW	2.019	255	0	0	
WW	WW	1.312	0	255	0	
HW	HW	1.358	0	0	255	
LW	LW	1.700	255	255	0	
JW	JW	1.320	0	255	255	
QW	QW	1.165	255	0	0	
GW	GW	1.250	0	255	0	
RW	RW	1.200	0	0	255	
SW	SW	1.363	255	255	0	
Gold	Unipearl Gold	1.320	0	255	0	
Bronze	Unipearl Bronze	1.284	255	0	0	

The Colourant Table lists the colourants and their names. This table defines the valid colourants that can be used in the formula table. The density column must be filled in if you have chosen for a Prisma gravimetric dispensing system or if the SDF file will be imported into PrismaPro. The RGB-Fields are the RGB Values of the colourants. They are not required, but when they are not filled out, PrismaPro will only show white canisters. The field Color Indication is colored by the program.

The last table is used to define some overall settings for the formula information. In the case where the SDF file is used for Prisma data this information is **not** used by the conversion program but can be used as a helpful check that the database settings are correct.

Formula type:	<input checked="" type="radio"/> Standard <input type="radio"/> Own	
Formula set:	<input checked="" type="radio"/> Complete formula <input type="radio"/> Selection for update	
Creation date:	January 1, 2000	
Formula quantity unit specification:		
	Unit name	Ratio
<input type="radio"/> Liter	Liter	
<input type="radio"/> ml	ml	0.001 ml/Liter
<input type="radio"/> Kg	kg	
<input type="radio"/> gram	gram	0.001 gram/kg
<input type="radio"/> Shot	Shots	1/48 US 0.61613 ml/shot
<input checked="" type="radio"/> Other		/Liter
	<input checked="" type="radio"/> Other unit type Liter <input type="radio"/> Other unit type Kg	
Comment:		



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Table 4: Settings Table

The formula type indicates whether the formulas are of type own or standard, the first column in the formulas table will refer to 'Customers' in the case where the formula type is own.

The formula set indicates if the formulas are a complete formula bank or an update. If it is a complete formula bank then the existing formulas will be deleted first otherwise the new formulas will be added to the existing formulas. If duplicate formulas exist then the last encountered formula in the SDF file will be added to the database.

The creation date is not a required field and can be used to specify the data on which the formulas where valid.

The *Formula quantity unit specification* section is used to define the unit that describes the colourant quantity amounts on the formula table. If the unit is *Liter, ml, kg, gram* or *other* then you may specify the unit name (this may not be empty). If the unit type is *shot* then you can select the appropriate shot size from the drop down list, the ratio with respect to ml's will be shown below your choice.

The comment field (maximum 30 characters) can be used for a short description of the formulas.

NOTE: The column positions and headings for the Formula, Colourant and Settings tables are fixed and must not be changed.



2.3 Data Definition

The following tables indicate the field types, lengths, restrictions, whether the field must be filled and a description of the field.

Key	
Len	Length
ME	Must Exist
C	ASCII Characters
N	Numeric
D	Decimal

The decimal notation is x.y where x is the number of positions before the decimal point and y is the number of positions after the decimal point.

Formula Table

Field	Type	Len	Restrictions	ME	Description
Collection	C	30	Cannot contain only spaces	True	Name of collection
Product-Code	C		Must be identified in Product Table.	True	Link to Product Table
Colour Name	C	30	Cannot contain only spaces	True	Used to Identify the colour in Prisma
Based on Cansize	C		Must be a decimal number followed by a space and then a valid unit.	True	Cansize on which the formula is based.
Base	C	15	Must exist in the Product Table	True	The base for the current formula.
Colourant #x	C	6	Must exist in the Colourant table	True	Code for Colourant
Quantity #x	D	8.3		True	Quantity of the colourant with the same number.

Product Table

Field	Type	Len	Restrictions	ME	Description
Product-Code	C		Must be Unique. Format: a letter from the alphabet optionally followed by a number.	True	The code referred to in the Formula table.
Product Name	C	30	Cannot contain only spaces. Must be unique	True	Name of Product.
Cansize #x	C		Must contain a 'T' or be empty.	At least one per product	'T' indicates that the corresponding cansize is valid for that product, empty otherwise.
Base Code #x=Base Name	D	2.2		At least one per	Factor. 1 indicates no factor correction. Leave field empty to



#x				product	indicate that the Product/Base combination does not exist.
----	--	--	--	---------	------------------------------------------------------------

Colourant Table

Field	Type	Len	Restrictions	ME	Description
Colourant Code	C	6	Must be unique.	True	The colour code that can be used in the formula table
Colourant Name	C	20	Must be specified	True	The colour name.
Density	D	2.3	Must be specified	False	Used for gravimetric dispensing.

Settings Table

Field	Type	Len	Restrictions	ME	Description
Formula type				True	Type of formulas
Formula set					Whether the data is complete or an update
Creation date	Date			False	The data on which the formulas are valid
Name	C		Must be used in PrismaPro	True	The name of unit used for formula colourant quantities
Type				True	The type of unit used
Ratio	D	3.8	Must be a valid decimal number	True	The ratio of the unit with respect to its type
Comment	C	30		False	Short description of formulas

2.4 How the link between Formula and Product is established

There will be an entry in the Product Table for each Product in your inventory and the link to the Formula Table is made as follows. Each Product in the Product Table must be assigned a unique Product Code. Each formula in the Formula Table must indicate one or more valid Product Codes in the Product-Code column, the formula will then be created for each Product corresponding to the Product-Codes given. Multiple Product-Codes can be indicated in the Formula Table by listing them one after another without spaces or other separators between them. Product-Codes are given as alphabetic characters (upper or lower case) with an optional number. Examples of valid codes are "A", "B", "d", "A1", "F5", "z3" and "H12".

2.5 Extra Fields

The possibility exists for you to add extra fields over and above the standard fields that have been defined above. This extra field can be added as a column to the right of the last Colourant Quantity¹.

¹ The Price group and Date fields are special cases and must have the column headers "PG" and "FORMULA_DATE" respectively



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2.5.1 Extra field restrictions with respect to Prisma

The header of this column must not exceed 8 characters in length and may not contain any spaces.

If you choose to include an extra field we will require further information in order to reflect this field in the Prisma user-interface. This information is:

- The label that must be used to identify the field in the user-interface i.e. the text you would like to see in Prisma
- A short description of the field and it's purpose. This will enable us to add it to the correct screens in Prisma as well as establish the correct links with in the database structure.
- Whether or not the field is to be used as a search key.

This information can be delivered in a textual format along with the three comma delimited files produced by the validation program (described below). Note that Excel file does not have any place to enter the additional information and that it must be supplied separately.

Note: The changes that need to be made to the Prisma user interface will take some time and it will therefore take longer to develop a working program if you specify an extra field.

2.5.2 Extra field information for PrismaPro

The Extra field header is given as the field name in the PrismaPro database. It is important that the field names in PrismaPro are unique so that there is no ambiguity as to which field the data refers to.

2.6 Restrictions

Restrictions exist in that a Microsoft Excel spreadsheet can have a maximum of 65536 rows, this means that the maximum number of rows in any of the tables will be 65533 (rows for headings and padding excluded). If you need to enter more then the maximum number of possible formulas for one formula table then there is a possibly to add more formula tables (see 3.1 below) .

An added restriction is that **NO** other information, other then that in the tables, may be entered on the sheets where the tables exist.

3 Validation Program (Microsoft Excel)

In the Excel file that you received is included a checking facility that validates that the data you have entered meets the format requirements and that the data is complete. When you open the Excel document be sure to enable macros. The first check is on the RGB Values of the colourants. When the values are not correct, the excel program warns for improper data. You get the choice to ignore this or to correct this. When you choose to ignore, the validation of the excel program will not be influenced, but some colourants will not have the proper color in the PrismaPro program.

3.1 Adding/Deleting Formula Tables

If the number of formulas in your data exceeds the maximum number that can be entered in a single Formula table you can add a new Formula Table by clicking the button on the "Check" sheet. This will add a new sheet where you can add further formulas. If you have specified extra fields then you will have to ensure that the column headings in each Formula Table are the same. Note that the last line of any table must be empty.



To delete a Formula Table you can click on the button in the “Check” sheet and then select the Table to delete, you can never delete the original Formula Table.

3.2 Product/Base Combination checking

The checking program will check that any product base combination specified in the Formula Table exists in the Product Table. There are two options that exist in dealing with case where the combination does not exist in the Product Table:

- Report as error : this will list the occurrence as an error
- Remove : this will remove the reference to the product from the Formula Table, if the Product Code Field is then empty an error has been found since the formula can not be defined.

3.3 Validation your data

Once you have entered the data in the format described above you can click the “Validate” button on the “Check” sheet. Any errors in your data will be presented in a window on the screen, you can then select an error and the location of the error will be highlighted in the corresponding table. All the errors encountered will also be displayed on the “Errors Found” sheet.

3.4 Printing the errors found

Once any errors have been found on validating your data you will be presented with an Error form where you can select the error and “jump” to the location of the error. However, to print the errors found you need to close the error form and follow the following steps:

- select the “Errors Found” sheet
- highlight the cells that you would like to print
- select “Set Print Area” from the “Print Area” option on the “File” menu
- select “Print” from the “File” menu and print.

3.5 Exporting your data

If you have Validated the data and there are no errors a summary form will be shown where a short summary of your data is displayed. It is important that you check that this information corresponds with your recipe information. From the summary form you have the option to create the export file, this file can then be converted/imported to Prisma or PrismaPro.

3.6 Importing an existing SDF file

If you have created or exported an SDF file and would like to import it into the Excel file in order to edit it then this is possible by entering the full path and filename in the space provided on the check sheet and pressing the import button.

4 Examples

The following are some examples and apply to the example tables on the attached sheets.

Example 1: A formula to be created in one Product

The first recipe entered in the Formula Table can be read as follows: It will be created in the RAL collection in the product that corresponds to Product-Code “A”. The colour name will be 101 and



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the recipe is based on a 1 LT cansize. The recipe will be created using base P and will contain the colourants A, B and C in the quantities given. Product-Code "A" corresponds to "Egg Shell" and no factor needs to be applied, the fill percentage for this Product/Base combination is 90%. The colour will only be available in a 1 lt cansize.

Example 2: A formula to be created in Multiple products

The second recipe entered in the Formula Table can be read as follows: It will be created in the RAL collection in the products that correspond to Product-Codes "A" and "B". The colour name will be 102 and the recipe is based on a 1 LT cansize. The recipe will be created using base EP and will contain the colourants B and G in the quantities given. Product-Codes "A" and "B" correspond to products "Egg Shell" and "Primer" respectively. No factors are applied to any of the Product/Base combinations and the fill percentages are 90%. The colour will be available in a 1lt cansize in Product "Egg Shell" and in a 2 lt cansize in Product "Primer".

Example 3: The use of a factor

The third recipe entered in the Formula Table can be read as follows: It will be created in the RAL collection in products corresponding to Product-Code "A", "B" and "s". The colour name will be 103 and the recipe is based on a 10 LT cansize. The recipe will be created using base D and will contain the colourants C and D in the quantities given. Product-Codes "A", "B" and "s" correspond to Products "Egg Shell", "Primer" and "Gloss". Note that the combination of Product "Primer" and Base "D" has a factor of 0.8. When dispensed in Product "Egg Shell" or "Gloss" the quantities dispensed are those indicated in the Formula Table, when dispensed in Product "Primer" the quantities will be those in the Formula Table multiplied by 0.8. The fill percentages for these Product/Base combinations are 90%. The colour will be available in a 1 lt cansize for Products "Egg Shell" and "Gloss" but only in a 2 lt cansize for Product "Primer".

Example 4: The fill percentage

The fourth recipe entered in the Formula Table can be read as follows: It will be created in the NCS collection in the Product corresponding to Product-Code "C3". The colour name will be 104 and the recipe is based on a 1 LT cansize. The recipe will be created using base ED and will contain the colourants A and F in the quantities given. Product-Code "C3" corresponds to Product "Floor Paint". There is no factor applied to the Product/Base combination but the Fill percentage is set to 95%. That is to say that the maximum amount of colourant that can be added to Base "ED" is 5% of the size of the cansize being dispensed into. The colour will be available in both 1 lt and 3 lt cansizes.

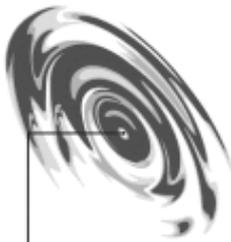


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Collection	Product Code	Colour Name	Based on Cansize	Base	Colourant									
					Quantity 1	Quantity 2	Quantity 3	Quantity 4	Quantity 5	Quantity 6				
RAL	A	101	1 lt	P	A	B	4.62	C	6.7					
RAL	AB	102	1 lt	EP	B	G	2.6							
RAL	ABs	103	10 lt	D	C	D	4.6							
NCS	C3	104	1 lt	ED	A	F	4.5							
NCS	ABC3s	105	1 lt	EP	B	E	5	F	4.3					
NCS	BC3	106	1 lt	D	B	5.6								
House	Bs	107	1 lt	ED	F	8								

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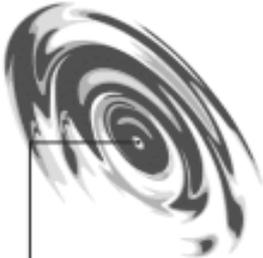


Formula Table



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Product Code	Product Name	1 lt	2 lt	3 lt	P=Pale	EP=Extra Pale	D=Deep	ED=Extra Deep
A	Egg shell	T			1		1	
B	Primer		T		1		0.8	1
C3	Floor Paint	T		T			1	1
D	Wall Paint		T	T				
s	Gloss	T					1	1
Fill					90	90	90	95



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Colourant Table



<i>Colourant Code</i>	<i>Colourant Name</i>	<i>Density</i>		
A	Black	1		
B	Light Blue	1		
C	White	1		
D	Dirty yellow	1		
E	Dark blue	1		
F	Orange	1		
G	Yellow oxide	1		
H	Pale red	1		
I	Red	1		
J	Moss green	1		
K	Light green	1		
L	Dark green	1		
M	Pale blue	1		
N	Dark red	1		
O	Pale yellow	1		
P	Purple	1		