

Audit - EU DK MAL Code

SIGMADUR 550 BASE YELLOW 3138

MAL Code	Product as is	Ready-for-use mixture
MAL Protection	<p data-bbox="315 284 353 308">4-3</p> <p data-bbox="315 325 1814 384">According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:</p> <p data-bbox="315 421 1814 539">General: Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.</p> <p data-bbox="315 572 1814 632">In all spraying operations in which there is return spray, the following must be worn: respiratory protection and arm protectors/ apron/coveralls/protective clothing as appropriate or as instructed.</p> <p data-bbox="315 716 488 740">MAL-code: 4-3</p> <p data-bbox="315 748 1814 807">Application: When spraying in new* booths if the operator is outside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.</p> <ul data-bbox="315 841 987 865" style="list-style-type: none">- Air-supplied half mask and eye protection must be worn. <p data-bbox="315 898 1814 957">When using scraper or knife, brush, roller, etc. for pre- and post-treatments in cabins or booths of the existing* facility type, if the operator is inside the spray zone.</p> <ul data-bbox="315 991 1106 1015" style="list-style-type: none">- Air-supplied half mask, coveralls and eye protection must be worn. <p data-bbox="315 1048 1814 1107">During downtimes, cleaning and repair of closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.</p> <ul data-bbox="315 1141 920 1165" style="list-style-type: none">- Air-supplied full mask and coveralls must be worn. <p data-bbox="315 1198 1267 1222">When spraying in existing* spray booths, if the operator is outside the spray zone.</p> <ul data-bbox="315 1256 1068 1279" style="list-style-type: none">- Air-supplied full mask, arm protectors and apron must be worn. <p data-bbox="315 1313 1814 1372">During non-atomizing spraying in existing* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone.</p> <ul data-bbox="315 1406 757 1430" style="list-style-type: none">- Air-supplied full mask must be worn. <p data-bbox="315 1463 1814 1522">During all spraying where atomization occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.</p>	<p data-bbox="1888 284 2063 308">Not applicable.</p> <p data-bbox="1888 325 2063 349">Not applicable.</p> <p data-bbox="1888 716 2063 740">Not applicable.</p>

- Air-supplied full mask, coveralls and hood must be worn.

Not applicable.

Drying: Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc. must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

Polishing: When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

Caution The regulations contain other stipulations in addition to the above.

*See Regulations.

Not applicable.

Not applicable.

Low Boiling
Liquid
MAL Number
Audit (Textual)

1792.5

Not applicable.

43

Not applicable.

Figure-before-dash (from MAL Number) = 4

$1600 < \text{MAL Number} [1792.5] \leq 3200$

$\text{MAL Number} = \text{density} * \sum[\text{Conc}(i) * \text{MAL Factor}(i)] = 1.08 * 1659.8 = 1792.5$

Density (from Density (g/m³) data entry) = 1.08

$\sum[\text{Conc}(i) * \text{MAL Factor}(i)] = 1659.8$

[XYLENES] Conc * MAL Factor = 27.35% * 46 = 1258.0

MAL Factor entered against range: '0 to 100' = 46

[N-BUTYL ACETATE] Conc * MAL Factor = 7.453% * 14 = 104.3

MAL Factor entered against range: '0 to 100' = 14

[ETHYLBENZENE] Conc * MAL Factor = 4.875% * 46 = 224.2

MAL Factor entered against range: '0 to 100' = 46

[2,6-DIMETHYLHEPTANONE] Conc * MAL Factor = 0.57% * 47 = 26.79

MAL Factor entered against range: '0 to 100' = 47

[2-BUTOXY ETHANOL] Conc * MAL Factor = 0.57% * 25 = 14.25

MAL Factor entered against range: '0 to 100' = 25

[cyclohexanone] Conc * MAL Factor = 0.2422% * 70 = 16.96

MAL Factor entered against range: '0 to 100' = 70

[TOLUENE] Conc * MAL Factor = 0.09770% * 74 = 7.230

MAL Factor entered against range: '0 to 100' = 74

[1-METHOXY-2-PROPYL ACETATE] Conc * MAL Factor = 0.07125% * 19 = 1.354

MAL Factor entered against range: '0 to 100' = 19

[1-BUTANOL] Conc * MAL Factor = 0.02223% * 67 = 1.490

MAL Factor entered against range: '0 to 100' = 67

[ISOBUTYL ALCOHOL] Conc * MAL Factor = 0.01416% * 67 = 0.9485

MAL Factor entered against range: '0 to 100' = 67

[BENZENE] Conc * MAL Factor = 0.003672% * 880 = 3.231

MAL Factor entered against range: '0 to 100' = 880

[ACETIC ACID] Conc * MAL Factor = 0.0007411% * 400 = 0.2964

MAL Factor entered against range: '0 to 100' = 400

[2-METHOXY-1-PROPYL ACETATE] Conc * MAL Factor = 0.0005643% * 181 = 0.1021

MAL Factor entered against range: '0 to 100' = 181

[CUMENE] Conc * MAL Factor = 0.000543% * 1000 = 0.543

MAL Factor entered against range: '0 to 100' = 1000

[PROPYLENE OXIDE] Conc * MAL Factor = 0.000002131% * 8333.3 = 0.01776

From DK (Working Environment Authority) OELs: OELs in mg/m³ and ppm available: $2 * 10000 / \text{OEL in mg/m}^3 = 2 * 10000 / 2.4 = 8333.3$

Available value in mg/m³ = 2.4

Available value in ppm = 1

Warning: ERCF of 2 used. Contact Authorities for MAL Factor.

[ACETALDEHYDE] Conc * MAL Factor = 0.0000002717% * 1000 = 0.0002717

MAL Factor entered against range: '0 to 100' = 1000

[HYDROCHLORIC ACID] Conc * MAL Factor = 0.0000002717% * 2900 = 0.0007879
MAL Factor entered against range: '0 to 100' = 2900
[FORMALDEHYDE] Conc * MAL Factor = 0.0000002002% * 2500 = 0.0005005
MAL Factor entered against range: '0 to 0.1' = 2500
[ETHYLENE OXIDE] Conc * MAL Factor = 0.0000002002% * 11111.1 = 0.002224
From DK (Working Environment Authority) OELs: OELs in mg/m³ and ppm available: 2 * 10000 / OEL in mg/m³ = 2 * 10000 / 1.8 = 11111.1
Available value in mg/m³ = 1.8
Available value in ppm = 1
Warning: ERCF of 2 used. Contact Authorities for MAL Factor.
[1,4-DIOXANE] Conc * MAL Factor = 0.0000001144% * 390 = 0.00004462
MAL Factor entered against range: '0 to 100' = 390
[METHYL ALCOHOL] Conc * MAL Factor = 0.0000001144% * 54 = 0.000006178
MAL Factor entered against range: '0 to 100' = 54
[METHYL CHLORIDE] Conc * MAL Factor = 0.0000001144% * 476.2 = 0.00005448
From DK (Working Environment Authority) OELs: OELs in mg/m³ and ppm available: 2 * 10000 / OEL in mg/m³ = 2 * 10000 / 42 = 476.2
Available value in mg/m³ = 42
Available value in ppm = 20
Warning: ERCF of 2 used. Contact Authorities for MAL Factor.

Ingredients with MAL factor of 0 [did not contribute] {Denmark MAL Code}

hydroxy acrylic resin (36.60%)
Default assumption [non-volatile] = 0
MONOAZO PIGMENT OF THE BENZIMIDAZOLONE RANGE (9.121%)
MAL Factor entered against range: '0 to 100' = 0
TITANIUM DIOXIDE (6.060%)
MAL Factor entered against range: '0 to 100' = 0
BARIUM SULPHATE (3.848%)
MAL Factor entered against range: '0 to 100' = 0
N,N-1,6-HEXANEDIYLBIS (12-HYDROXY-OCTADECANEIMIDE) (1.853%)
MAL Factor entered against range: '0 to 100' = 0
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate (0.428%)
Default assumption [non-volatile] = 0
BLOCKED COPOLYMER (0.2565%)
MAL Factor entered against range: '0 to 100' = 0
ALUMINUM HYDROXIDE (0.2243%)
MAL Factor entered against range: '0 to 100' = 0
2-HYDROXYETHYL METHACRYLATE (0.09760%)
MAL Factor entered against range: '0 to 100' = 0
SILICA (0.06409%)
MAL Factor entered against range: '0 to 100' = 0
Siloxanes and Silicones, di-Me, [(triethoxysilyloxy)-terminated (0.04275%)
Default assumption [non-volatile] = 0
ALKOXYLATED BUTYL ETHER (0.04263%)
MAL Factor entered against range: '0 to 100' = 0
ZIRCONIUM OXIDE (0.03204%)
MAL Factor entered against range: '0 to 100' = 0
TRIMETHYLOLPROPANE (0.02884%)
MAL Factor entered against range: '0 to 100' = 0
proprietary siloxane (0.01976%)
Default assumption [non-volatile] = 0
proprietary polyglycol (0.01200%)
Default assumption [non-volatile] = 0
WATER (0.002964%)
MAL Factor entered against range: '0 to 100' = 0
dibutyltin dilaurate (0.001387%)
MAL Factor entered against range: '0 to 100' = 0
organotin compound (0.0005643%)
From US (ACGIH) OELs: Product is assumed to be non-volatile, due to an OEL in mg/m³ being available, and no ppm OEL being available] = 0
Available value in mg/m³ = 0.1
OCTAMETHYLCYCLOTETRASILOXANE (0.0002574%)
MAL Factor entered against range: '0 to 100' = 0
Decamethylcyclopentasiloxane (0.0002574%)
MAL Factor entered against range: '0 to 100' = 0
COCONUT FATTY ACIDS (0.0000429%)
MAL Factor entered against range: '0 to 100' = 0

Figure-after-dash (Ingredient(s) above the cut-off on their own) = 3

Ingredients above the Figure-after-dash 3 concentration limit on their own {Denmark MAL Code}

XYLENES (27.35%)

Ingredient concentration is above the limit [10%]

Stricter figure-after-dash numbers that are not available because $\Sigma [\text{ing conc} / \text{ing limit}] < 1$

Figure-after-dash 6 calculated ratio: $\Sigma [\text{ing conc} / \text{ing limit}] = 0.04095054636$

BENZENE: $\text{Ing conc} / \text{Ing limit} = 0.003672 / 0.1 = 0.03672$
Minimum value of concentration limit associated with figure-after-dash 6 = 0.1

dibutyltin dilaurate: $\text{Ing conc} / \text{Ing limit} = 0.001387 / 1 = 0.001387$
Minimum value of concentration limit associated with figure-after-dash 6 = 1

2-METHOXY-1-PROPYL ACETATE: $\text{Ing conc} / \text{Ing limit} = 0.0005643 / 0.2 = 0.002822$
Minimum value of concentration limit associated with figure-after-dash 6 = 0.2

PROPYLENE OXIDE: $\text{Ing conc} / \text{Ing limit} = 0.000002131 / 0.1 = 0.00002131$
Minimum value of concentration limit associated with figure-after-dash 6 = 0.1
Figure-after-dash (CLP hazard) = 6
GHS Status - EU
Carcinogen - Category 1B - From 'Entered data'
Entered data - [EU] [9] [Datalink]
Germ cell mutagenicity - Category 1B - From 'Entered data'
Entered data - [EU] [9] [Datalink]

FORMALDEHYDE: $\text{Ing conc} / \text{Ing limit} = 0.0000002002 / 1 = 0.0000002002$
Minimum value of concentration limit associated with figure-after-dash 6 = 1

ETHYLENE OXIDE: $\text{Ing conc} / \text{Ing limit} = 0.0000002002 / 0.1 = 0.000002002$
Minimum value of concentration limit associated with figure-after-dash 6 = 0.1
Figure-after-dash (CLP hazard) = 6
GHS Status - EU
Carcinogen - Category 1B - From 'Entered data'
Entered data - [EU] [14] [Datalink]
Germ cell mutagenicity - Category 1B - From 'Entered data'
Entered data - [EU] [14] [Datalink]
Reproductive toxicity
Calculation intermediates involved in final hazard assignment
Reproductive toxicity - Fertility - Category 1B - Effect On: Fertility - From 'Entered data'
Entered data - [EU] [14] [Datalink]
Reproductive toxicity - Unborn child - Category 2 - Effect On: UnbornChild - From 'Entered data'
Entered data - [EU] [14] [Datalink]

1,4-DIOXANE: $\text{Ing conc} / \text{Ing limit} = 0.0000001144 / 10 = 0.0000001144$
Minimum value of concentration limit associated with figure-after-dash 6 = 10

METHYL ALCOHOL: $\text{Ing conc} / \text{Ing limit} = 0.0000001144 / 20 = 0.0000000572$
Minimum value of concentration limit associated with figure-after-dash 6 = 20

METHYL CHLORIDE: $\text{Ing conc} / \text{Ing limit} = 0.0000001144 / 0.1 = 0.000001144$
Minimum value of concentration limit associated with figure-after-dash 6 = 0.1
Figure-after-dash (OEL Criteria - Carcinogen) = 6
DK OEL: Carcinogen CMR applicable

Figure-after-dash 5 calculated ratio: $\Sigma [\text{ing conc} / \text{ing limit}] = 0.44751904$

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate: $\text{Ing conc} / \text{Ing limit} = 0.428 / 1 = 0.428$
Minimum value of concentration limit associated with figure-after-dash 5 = 1
Figure-after-dash (CLP hazard) = 5
GHS Status - EU
Skin sensitization - Category 1A - From 'Entered data'
Entered data - [EU] [99] [User]

2-HYDROXYETHYL METHACRYLATE: $\text{Ing conc} / \text{Ing limit} = 0.09760 / 5 = 0.01952$
Minimum value of concentration limit associated with figure-after-dash 5 = 5

Figure-after-dash 4 calculated ratio: $\Sigma [\text{ing conc} / \text{ing limit}] = 0.00002969834$

ACETIC ACID: $\text{Ing conc} / \text{Ing limit} = 0.0007411 / 25 = 0.00002964$
Minimum value of concentration limit associated with figure-after-dash 4 = 25

HYDROCHLORIC ACID: $\text{Ing conc} / \text{Ing limit} = 0.0000002717 / 5 = 0.0000005434$
Minimum value of concentration limit associated with figure-after-dash 4 = 5