Audit - EU DK MAL Code

SIGMADUR 540 BASE BASE Z

	Product as is	Ready-for-use mixture
MAL Code	4-5	Not applicable.
MAL Protection	**According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:** **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. 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.	Not applicable.
	MAL-code: 4-5 **Application:** When using scraper or knife, brush, roller etc. for pre- and post-treatments in a spray booth where the operator is outside the spray zone and when working in similar new* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in new* booths and cabins with non-atomizing guns. - Protective clothing must be worn. 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. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin. - Air-supplied half mask, protective clothing and eye protection must be worn. When spraying in new* booths if the operator is outside the spray zone. - Air-supplied half mask and eye protection must be worn. When spraying in existing* spray booths, if the operator is outside the spray zone. 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. 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. - Air-supplied full mask and protective clothing must be worn. 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.	Not applicable.

- Air-supplied full mask, protective clothing 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.

Low Boiling Liquid	Not applicable.	Not applicable.
MAL Number	1765.0	Not applicable.
Audit (Textual)	4-5 Figure-before-dash (from MAL Number) = 4 1600 < MAL Number [1765.0] ≤ 3200 MAL Number = density * Σ[Conc(i) * MAL Factor(i)] = 1.181 * 1494.5 = 1765.0 Density (from Density (g/m³) data entry) = 1.181 Σ[Conc(i) * MAL Factor(i)] = 1494.5 [N-BUTYL ACETATE] Conc * MAL Factor = 11.26% * 14 = 157.7 MAL Factor entered against range: '0 to 100' = 14 [XYLENES] Conc * MAL Factor = 8.528% * 46 = 392.3 MAL Factor entered against range: '0 to 100' = 46 [Solvent naphtha (petroleum), light arom.] Conc * MAL Factor = 4.87% * 58 = 282.5 MAL Factor entered against range: '0 to 100' = 58 [ISOBUTYL ALCOHOL] Conc * MAL Factor = 4.195% * 67 = 281.1 MAL Factor entered against range: '0 to 100' = 67 [ETHYLBENZENE] Conc * MAL Factor = 2.189% * 46 = 100.7 MAL Factor entered against range: '0 to 100' = 46 [1-METHOXY-2-PROPYL ACETATE] Conc * MAL Factor = 1.841% * 19 = 34.97 MAL Factor entered against range: '0 to 100' = 19 [Hydrocarbons, C9, aromatics] Conc * MAL Factor = 1.728% * 58 = 100.2 MAL Factor entered against range: '0 to 100' = 58 [2,6-DIMETHYLHEPTANONE] Conc * MAL Factor = 0.6511% * 47 = 30.60 MAL Factor entered against range: '0 to 100' = 47 [1,3,5-TRIMETHYLBENZENE] Conc * MAL Factor = 0.4917% * 58 = 28.52 MAL Factor entered against range: '0 to 100' = 58 [N-BUTYL ACRYLATE] Conc * MAL Factor = 0.3201% * 180 = 57.63 MAL Factor entered against range: '0 to 100' = 180 [TOLUENE] Conc * MAL Factor = 0.1466% * 74 = 10.85 MAL Factor entered against range: '0 to 100' = 74 [NAPHTHA (PETROLEUM); HYDROTREATED HEAVY] Conc * MAL Factor = 0.072% * 50 = 3.6 Default factor for Vapor Pressure ≥ 0.1 mm Hg = 50 Vapor Pressure ≥ 0.1 mm Hg Vapor Pressure (mm Hg) from entered value = 1.50012 [METHYL METHACRYLATE] Conc * MAL Factor = 0.0627% * 46 = 2.884 MAL Factor entered against range: '0 to 100' = 46 [Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics] Conc * MAL Factor = 0.03493% * 12 = 0.4192 MAL Factor entered against range: '0 to 100' = 12 [1-BUTANOL] Conc * MAL Factor = 0.01255% * 67 = 0.8406 MAL Factor entered against range: '0 to 100' = 67 [METHYL ALCOHOL] Conc * MAL Factor = 0.01000% * 54 = 0.5400 MAL Factor entered against range: '0 to 100' = 54 [BENZENE] Conc * MAL Factor = 0.007233% * 880 = 6.365 MAL Factor entered against range: '0 to 100' = 880 [2-METHOXY-1-PROPYL ACETATE] Conc * MAL Factor = 0.005616% * 181 = 1.016	Not applicable.

MAL Factor entered against range: '0 to 100' = 181
[PROPYLENE GLYCOL MONOMETHYL ETHER] Conc * MAL Factor = 0.0036% * 28 = 0.1008
MAL Factor entered against range: '0 to 100' = 28
[CUMENE] Conc * MAL Factor = 0.0015% * 1000 = 1.5
MAL Factor entered against range: '0 to 100' = 1000
[ACETIC ACID] Conc * MAL Factor = 0.000675% * 400 = 0.27
MAL Factor entered against range: '0 to 100' = 400
[PROPYLENE OXIDE] Conc * MAL Factor = 0.00000149% * 8333.3 = 0.01242
From DK (Working Environment Authority) OELs: OELs in mg/m³ and ppm available: 2 * 10000 / OEL in mg/m³ = 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 = 0.00000019% * 1000 = 0.00019
MAL Factor entered against range: '0 to 100' = 1000
[HYDROCHLORIC ACID] Conc * MAL Factor = 0.00000019% * 2900 = 0.000551
MAL Factor entered against range: '0 to 100' = 2900
[FORMALDEHYDE] Conc * MAL Factor = 0.00000014% * 2500 = 0.00035
MAL Factor entered against range: '0 to 0.1' = 2500
[ETHYLENE OXIDE] Conc * MAL Factor = 0.00000014% * 11111.1 = 0.001556
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 = 0.00000008% * 390 = 0.0000312
MAL Factor entered against range: '0 to 100' = 390
[METHYL CHLORIDE] Conc * MAL Factor = 0.00000008% * 476.2 = 0.00003810
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}
BARIUM SULFATE (20.79%)
MAL Factor entered against range: '0 to 100' = 0
acrylic resin (17.89%)
Default assumption [non-volatile] = 0
acrylic resin (8.323%)
Default assumption [non-volatile] = 0
polyacrylate resin (5.4%)
Default assumption [non-volatile] = 0
Reaction mass of dimethyl adipate and dimethyl glutarate and dimethyl succinate (4.988%)
Default assumption [non-volatile] = 0
POLYETHER POLYOL (3%)
Default assumption [non-volatile] = 0
ZINC ORTHOPHOSPHATE (0.98%)
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 (0.6%)
Default assumption [non-volatile] = 0
Reaction products of 12-hydroxyoctadecanoic acid and octadecanoic acid and 1,3-phenylenedimethanamine (0.56%)
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 = 3
Hexanoic acid, 2-ethyl-, zinc salt, basic (0.3124%)
MAL Factor entered against range: '0 to 100' = 0
POLYAMIDE WAX (0.24%)
MAL Factor entered against range: '0 to 100' = 0
QUARTZ (<10 microns) (0.2079%)
MAL Factor entered against range: '0 to 100' = 0
modified polyurethane (0.18%)
Default assumption [non-volatile] = 0
ALKOXYLATED BUTYL ETHER (0.02981%)
MAL Factor entered against range: '0 to 100' = 0
ZINC OXIDE (0.02%)
MAL Factor entered against range: '0 to 100' = 0
SILICONE CONTAINING ADDITIVE (0.014%)
Default assumption [non-volatile] = 0
proprietary siloxane (0.01382%)
Default assumption [non-volatile] = 0
proprietary polyglycol (0.00839%)
Default assumption [non-volatile] = 0

WATER (0.00502%)
MAL Factor entered against range: '0 to 100' = 0
OCTAMETHYLCYCLOTETRASILOXANE (0.00018%)
MAL Factor entered against range: '0 to 100' = 0
Decamethylcyclopentasiloxane (0.00018%)
MAL Factor entered against range: '0 to 100' = 0
dibutyltin dilaurate (0.000036%)
MAL Factor entered against range: '0 to 100' = 0
organotin compound (0.000036%)
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
Figure-after-dash (Σ [ing conc / ing limit] ≥ 1) = 5
Figure-after-dash 5 calculated ratio: Σ [ing conc / ing limit] = 1.492683
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate: Ing conc / Ing limit = 0.6 / 1 = 0.6
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]
Reaction products of 12-hydroxyoctadecanoic acid and octadecanoic acid and 1,3-phenylenedimethanamine: Ing conc / Ing limit = 0.56 / 1 = 0.56
Minimum value of concentration limit associated with figure-after-dash 5 = 1
Figure-after-dash (CLP hazard) = 5
GHS Status - EU
Skin sensitization - Category 1 - From 'Entered data'
Entered data - [EU] [99] [User]
N-BUTYL ACRYLATE: Ing conc / Ing limit = 0.3201 / 1 = 0.3201
Minimum value of concentration limit associated with figure-after-dash 5 = 1
METHYL METHACRYLATE: Ing conc / Ing limit = 0.0627 / 5 = 0.01254
Minimum value of concentration limit associated with figure-after-dash 5 = 5
Stricter figure-after-dash numbers that are not available because Σ [ing conc / ing limit] < 1
Figure-after-dash 6 calculated ratio: Σ [ing conc / ing limit] = 0.121753252
QUARTZ (<10 microns): Ing conc / Ing limit = 0.2079 / 10 = 0.02079
Minimum value of concentration limit associated with figure-after-dash 6 = 10
METHYL ALCOHOL: Ing conc / Ing limit = 0.01000 / 20 = 0.0005000
Minimum value of concentration limit associated with figure-after-dash 6 = 20
BENZENE: Ing conc / Ing limit = 0.007233 / 0.1 = 0.07233
Minimum value of concentration limit associated with figure-after-dash 6 = 0.1
2-METHOXY-1-PROPYL ACETATE: Ing conc / Ing limit = 0.005616 / 0.2 = 0.02808
Minimum value of concentration limit associated with figure-after-dash 6 = 0.2
dibutyltin dilaurate: Ing conc / Ing limit = 0.000036 / 1 = 0.000036
Minimum value of concentration limit associated with figure-after-dash 6 = 1
PROPYLENE OXIDE: Ing conc / Ing limit = 0.00000149 / 0.1 = 0.0000149
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: Ing conc / Ing limit = 0.00000014 / 1 = 0.00000014
Minimum value of concentration limit associated with figure-after-dash 6 = 1
ETHYLENE OXIDE: Ing conc / Ing limit = 0.00000014 / 0.1 = 0.0000014
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: Ing conc / Ing limit = 0.00000008 / 10 = 0.000000008
Minimum value of concentration limit associated with figure-after-dash 6 = 10
METHYL CHLORIDE: Ing conc / Ing limit = 0.00000008 / 0.1 = 0.0000008

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