Technical Data Sheet
Munkadur® GL

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munk + schmitz

Munkadur GL USA – Technical Data Sheet

Munkadur GL USA

Solvent-free Epoxy hot spraying coating for metal and concrete for use in the food sector

Product

- Solvent-free 2-components coating based on epoxy resin
- Surface area processing in 2-components hot spraying process
- Extremely durable, chemically resistant, and long-lasting
- Physiologically harmless
- Tested by experts according to EU and US guidelines (FDA)

Areas of application

- Internal coating for tanks and containers in the food industry
- References for beer, wine, sparkling wine and mineral water
- Proven for more than 15 years in daily use

Product characteristics

- Suitable for foods such as beer, wine, sparkling wine and mineral water; further foods upon request
- Very good adhesion to steel, stainless steel, aluminum and mineral surfaces
- Single coat application
- Testing of coating for porousness with electro-conductive substrates

Product Data

Colour

Base component:	yellow
Hardener component:	dark brown
Mixture:	dark brown

(All information to colours are approximate values and no RAL-colours.)

Appearance

Satin-finished, smooth, glassy surface

Packaging

Base component:	12.5 liter UN bucket
Hardener component:	12.5 liter UN bucket

Shelf life

Original buckets filled and unopened
2 years in a dry and cool storage area

Coating-Suggestions

Steel, stainless steel, aluminum

- 1x Munkadur GL USA
- Average layer thickness: 500 µm
- Minimum layer thickness: 350 µm
- Maximum layer thickness: 700 – 800 µm according to ambient conditions

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Concrete
- Reprofiling and applying a sustainable coat
- made of physiologically harmless polymer mortar
- 1x Munkadur GL
- Average layer thickness: 500 µm
- Minimum layer thickness: 350 µm
- Maximum layer thickness: 700 – 800 µm according to ambient conditions

Surface preparation

Steel
- Removal of welding beads, grinding down of welding seams and welding-seam overlaps
- Shot blasting according to SA 2 ½, free of dirt, grease and oil
- Average surface roughness: Rz > 40 µm

Stainless steel/aluminum
- Clean and blast with a non-ferritic blasting abrasive
  Average surface roughness: Rz > 40 µm

Concrete
- The surface to be coated must comply with technical building standards, be load bearing, solid, and free of bond-damaging substances.
- The surface tensile strength should be at least 1.5 N/mm² on average and may not fall below 1.0 N/mm² with the smallest individual value.
- Maximum residual moisture of 4 % according to CM-method.
- After blasting, at least one layer of physiologically harmless polymer-mortar adapted to the system has to be used for reprofiling and creating a continuous base course.

Technical Data

Material consumption

Approx. 1.0 kg/sq. meter (depending on the size of the container and ambient temperature)

Density

Base: approx. 1.409 kg/l
Hardener: approx. 1.399 kg/l
Mixture: approx. 1.404 kg/l

Mixing ratio

1 : 1 (proportion of weight)
1 : 1 (proportion of volume)

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Resistance

Chemical influences
- For pure chemicals: see M+S Resistance List
- For cleaning and disinfection agents: see M+S Compatibility List

Mechanical influences
Hardness > 90 according to Buchholz

Temperature
40 °C water, higher temperatures and media after testing

Munkadur surface roughness

Rz: 1.5 – 2.0 µm
Ra: 0.2 – 0.3 µm

Resistance to abrasion (ISO 7784:2016-12) S 33/ 500g/ 500 U

0.20 g

Pull-off test adhesion (ISO 4624:2016-08)

> 15 N/mm²

Impact resistance (ISO 6272:2011-11)

Coating side: < 40 cm height
Substrate side: < 2 cm height
1000 g falling weight

Processing Instructions / Conditions

Preparation of the material

Heat up buckets with base and hardener separated from each other to approx. 65 °C for maximally 18 h, fill into 2-components hot spraying unit and start coating procedure.

Please note:
Hardener material is temperature sensitive. Hardener material that has already been heated up once has to be used with caution. Not more than 30 % of Hardener in the spraying unit may consist of material that has been heated up more than one time.

Processing methods

Hot spraying
With special 2-components hot spraying unit
Undiluted

Spray nozzle:	0.53 - 0.76 mm (0.68 mm)
Temperature of base:	60 - 70 °C*
Temperature of hardener:	60 - 65 °C*
Temperature of tank wall:	> 10 °C
Relative humidity:	max. 80 %

Dew-point temperature must be at least 3 °C below the temperature of the substrate to be coated.

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*Please note:
The base/hardener temperatures need to be adjusted to the surface temperature. Too low temperatures (medium and wall temperatures) may lead to overspray whereas too high temperatures may lead to sagging of the coating. In practice, best coating results were obtained on tank/vessels at a temperature of up to 20 °C with machine temperatures of 65 °C (Base-/Hardener temperatures). Whereas with vessel at temperatures of >20 °C good results were obtained with Base-/Hardener temperatures of 60 °C.

Smoothing over / painting
Mix and apply Base and Hardener at a material temperature range between 18° C and 35° C. To avoid sagging, do not heat/store the repair portions nor work above 35° C.
For small surface repair spots or improvements only, see also:
Repair instructions for Munkadur GL

Please note:
Munkadur GL must not be diluted!

Pot life

approx. 40 minutes at 18 °C

Curing time

- At a minimum of 18 °C after 8 days, surface will be resistant to mechanical stresses and chemicals
- Temperatures > 18 °C will not shorten the hardening

Waiting time between two operations

- Maximum of 2 hours at no more than 20 °C
- For longer intermediate hardening times, shot blasting the coating is necessary

Reworking
Final drying time

Solely with itself
- Fully resistant to mechanical stresses and chemicals after 8 days at a minimum of 18 °C
- Tanks/containers can be closed immediately after the coating work
- No fresh air supply is required for full cure

Advice for initial filling

Before their initial filling, newly coated tanks or containers are to be cleaned and, if necessary, disinfected in compliance with the M+S Compatibility List for cleaning and disinfection agents.

Data basis

All technical data, dimensions and information in this data sheet are based on laboratory results and measurements. Depending on different environmental parameters and influences that are beyond our area of influence, the actual data may vary.

Exclusion of liability

The afore-mentioned information, especially the recommendations for processing and using our product, are based on our knowledge and experience in a normal case, provided that the product has been properly stored and used. Due to the varying substrate materials and differing working conditions, a guarantee of work results or liability from any kind of legal relationship cannot be established from this information or from verbal consultation.

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