



The New Alternative
for Piping Systems
with Food Contact

DEKADUR-L-HP

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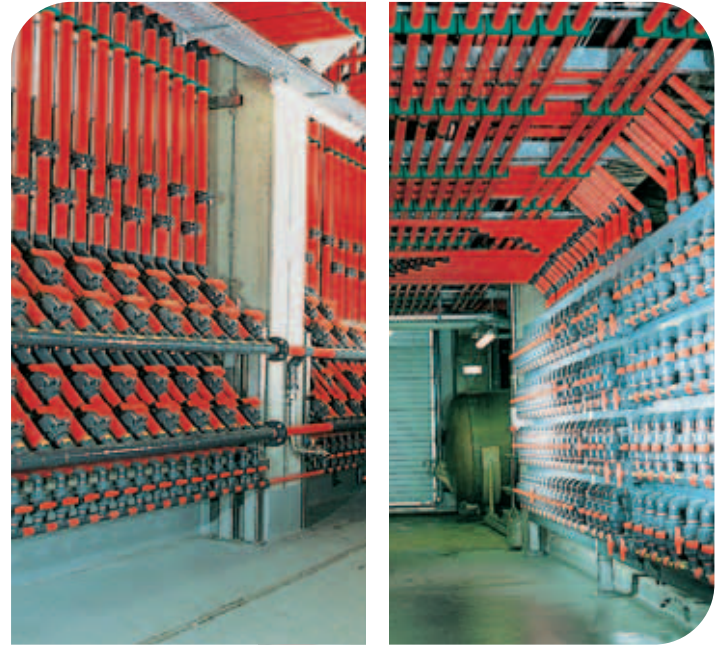
Your benefit in applying DEKADUR-L-HP

The "Physiologische Unbedenklichkeit" in contact with food stuff (neutral, alcoholic or acidic) has been certified by the Hygieneinstitut Gelsenkirchen for DEKADUR-L-HP pipes. Within the EC all relevant legal requirements are fulfilled. Please ask for the approval documents. Based on the results of these tests any deterioration of the food (e.g. beer, wine, milk, juices or vinegar) that is transported in DEKADUR-L-HP pipes can be excluded.

DEKADUR-L-HP pipes are labeled with the "wineglass-fork"-symbol which is required EC-wide. In addition DEKADUR-L-HP pipes are registered for food contact at the RAL (German association for quality and labeling); the wellknown RAL quality mark ("fork-knife"-symbol) with an individual number has been assigned. Ecologically harmless formulation and a continuous use up to temperatures of 60 °C.

Novel and promising application of unplasticized PVC; for decades the material PVC has already successfully been used worldwide for drinking water supply as well as industrial piping.

Remarkable cost-advantages compared to stainless steel or other polymers for this particular application. Lower price in this case does not mean inferior but appropriate. Both the physical as well as the chemical processing conditions in modern food industry often do not require any high-temperature resistant material. Exactly this gap in the piping-market is now closed by DEKADUR-L-HP – but not at the expense of quality. Approved for food contact as well as the fabrication according



to DIN-standards DEKADUR-L-HP pipes are now ready to meet all your requirements; of course you can rely on the high quality you expect from DEKA, the specialist for high-performance industrial piping systems.

Outstanding resistance to chemicals and a smooth inner surface structure ($ra \leq 1 \mu m$).

Referring to corrosion resistance and durability DEKADUR-L-HP offers the whole range of well-known benefits of a PVC-U piping system. A straight forward installation technique by adhesive jointing is included.

(Physical) properties of unplasticized PVC (guide values)

Property	Value	Unit
Density	1.40	g/cm ³
Tensile Strength	55	N/mm ²
Elongation at Break	> 30	%
Impact Resistance	no failure	kJ/m ² (23°)
E-Modulus	3000	N/mm ²
Linear Thermal Extrusion Coefficient	0.08	mm/(m °C)
Max. Service Temperature	60	°C
Vicat-Softening Point	> 76	°C (VST/B 50)
Water Absortion	< 4	mg/cm ³
Surface Resistivity	ca. 10 ¹³	Ω

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Pipes approved for Food Contact

The legal background

Standardization of product specifications is gradually increasing in the European Community (EC). As a consequence several fields of the application of polymer piping systems for food contact have already to abide by Europe-wide standardized legal regulations.

In Germany the relevant EC-guidelines are translated into national law by the Lebensmittel-Bedarfsgegenstandsgesetz (LMBG) and more specifically the Bedarfsgegenstände-verordnung (BGV).

However, the EC still lacks a complete and general regulation of all relevant aspects; thus in Germany several specifications of the product are still laid down in the so called BfR-Empfehlungen (Empfehlungen des Bundesinstitutes für Risikobewertung; former German Health Authority).

Complying with European law all polymer-pipes with direct food stuff contact have to be examined and certified as a finished product; any approval of the raw material is clearly necessary but not sufficient in itself. In particular all products approved this way have to be labeled in a standardized way according to EC law.

Note that in Germany any certification of the Physiologische Unbedenklichkeit (highest degree of food approval) requires fulfilling both the EC-requirements (BGV, LMBG) as well as the BfR-Empfehlungen.

The most decisive aspect of the BfR-Empfehlung is the classification of the polymer-additives in "positive lists" according to their toxicology. Non-listed substances must not be used in the polymer product.

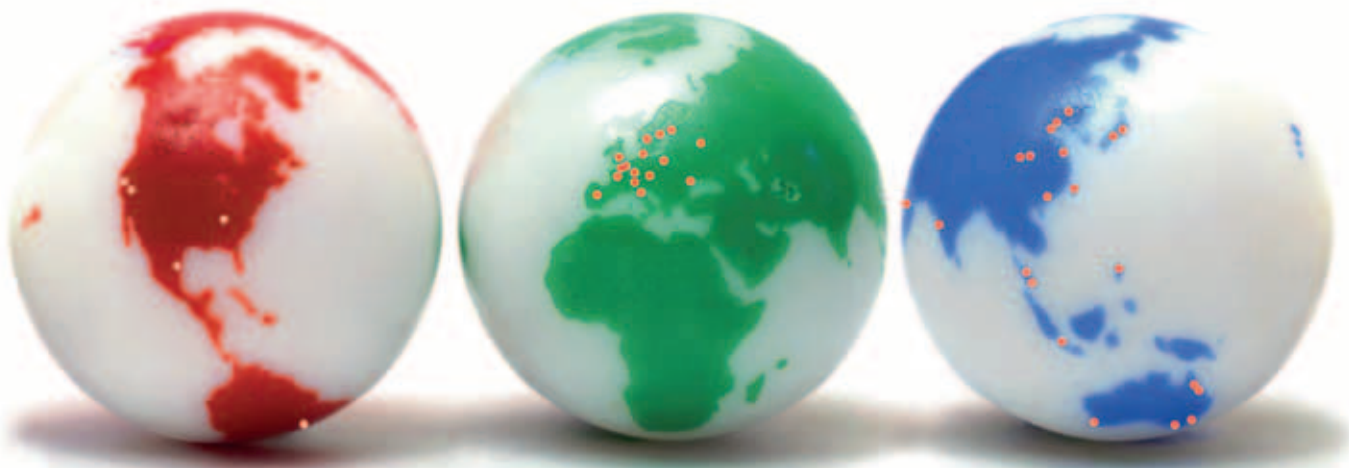
With regard to unplasticized PVC particularly this feature is of central interest since only especially designed PVC-thermo-stabilizers do meet these requirements. As a rule tried and tested PVC-U-pressure pipe formulations can not simply be used directly.



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