Plastomoll® DOA

Plasticizer for PVC, surface coatings and rubber. Especially suited for flexible PVC colorants and coatings requiring good low-temperature properties. Plastomoll® DOA meets the requirements for good packaging and can, therefore, be used for flexible PVC films for food contact (cling film).

Chemical Nature Dioctyl adipate

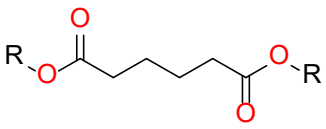
BASF Registered Name Plastomoll® DOA

CAS No. 103-23-1

Molecular Weight 371

Formula $C_{22}H_{42}O_4$

Molecular Structure



where R = C_8H_{17}

Product Specifications

	Value	Test Method
Specific gravity @ 25°/25 °C	0.923 - 0.927	ASTM D-4052
Ester content, % by weight (minimum)	99.6	ASTM D-3465
Acid Number, mg KOH/g (maximum)	0.1	ASTM D-1045
Water, % by weight (maximum)	0.1	ASTM E-203
Color, Pt-Co Units (APHA, maximum)	25	ASTM D-5386
Suspended Matter	COLSFFM*	visual

*Clear Oily Liquid Substantially Free of Foreign Material

Typical Physical Properties

The following data were measured in the BASF Corp. laboratory. They do not represent any legally binding guarantee of properties for our sales product.

	Value
Pour point, °C	-75
Flash point (COC), °C	199
Odor	mild characteristic
Surface Tension, mN/m	30.3
Solution Temperature, °C	144
Plastisol Gelation Temperature, °C	140
Vapor Pressure @ 20 °C, mbar	< 0.01
Solubility @ 25 °C in water, mg/L	< 0.01
Refractive Index $^{\eta}D20$	1.446

Viscosity & Density Data

Temperature (°C)	Dynamic viscosity (cP)	Density (g/cm³)
-40	760	0.972
-30	280	0.964
-20	122	0.956
-10	60.9	0.949
0	34.1	0.941
10	21.0	0.933
20	13.8	0.926
40	7.08	0.911
60	4.25	0.896
80	2.84	0.881

Description

Plastomoll® DOA is a highly efficient plasticizer which imparts excellent low temperature flexibility and resistance to impact to the base resin. For these reasons it finds wide use in polymeric systems based on vinyl, nitrocellulose and rubber. It is extensively used in food contact applications.

In addition to its high efficiency and contribution to the low temperature properties of vinyl, Plastomoll® DOA is chemically stable and resistant to discoloration on extended exposure to heat and ultraviolet light.

The combination of low viscosity and efficiency provide excellent dry blending and processing characteristics.

Applications

When used in plastisols, Plastomoll® DOA imparts low initial viscosity and good viscosity stability. The contribution to relative yield value suggests use in dip coating formulations where resistance to sag is required.

Safety

Plastomoll® DOA does not require special handling. Handle in accordance with good industrial hygiene and safety practices. Avoid eye contact by wearing personal protective equipment. If eye contact occurs, wash with flowing water and contact physician.

Avoid repeated or prolonged skin contact. Avoid breathing vapors by providing adequate ventilation.

Always refer to the Safety Data Sheet (SDS) for detailed information on safety.

Storage and Handling

Plastomoll® DOA can be stored for one year at temperatures below 40°C, if moisture is excluded.

Packaging

Plastomoll® DOA is available in bulk, tank trucks or rail cars.

Contact Information

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