

Formula

C24H44O4
 (Diethyl hexyl cyclohexane)

Molecular Weight

396

CAS registry number

84731-70-4

Description:

DEHCH can be used in all of the flexible PVC products include toys, upholstery as a non-Phthalate plasticizer. DEHCH is a clear, colorless plasticizer. DEHCH recommended for use in medical, Food contact material, toys Wall paper, Vinyl tile applications. DEHCH is almost insoluble in water. DEHCH is miscible and compatible with all of the monomeric plasticizers commonly used in PVC. So it can use PVC formulation mixed with the monomeric plasticizers.

Storage:

DEHCH has an almost unlimited shelf life when properly stored in closed containers at temperatures below 40 °C and the exclusion of humidity. Always refer to the Material Safety Data Sheet (MSDS) for detailed information on handling and disposal.

Properties:

Property	Unit	Value	Test method
Dynamic viscosity(25 °C)	mPa·s	50~55	ASTM D445
Specific gravity	20°C/20°C	0.984±0.003	JIS K-6751
Colour	APHA	30 max	JIS K-6751
Refractive index	nD25	1.487±0.003	JIS K-6751
Acid value	mg KOH/g	0.03 max	JIS K-6751
Volatile content	Weight %	0.1max	JIS K-6751

Environmental feature

DEHCH is a non-phthalate-based eco-friendly plasticizer that can be used for various applications in contact with people. DEHCH has been certified according to various regulations

Purpose	Certification
Wrap	FDA 21 CFR 175.300 <Resinous and polymeric coatings.>
Sealing Gasket	FDA 21CFR 177.1210 <Closures with sealing gaskets for food containers>
Toy	6Cl Phthalate: Regulation (EC) No 1907/2006, Annex XVII, 51/52
	Cadmium: Regulation (EC) No 552/2009, Annex XVII, 23
	PAHs: AfPS GS 2014:01
	175 SVHC Screening: (EC) No. 1907/2006 (REACH) Annex XIV
	Requirements of EN 71-3(migration of certain 19 elements.), EN 71-9(Organic Chemical Compounds)
	Heavy Metal Soluble (ASTM F963)

Properties

<PVC>

	DEHCH	DOP	DOTP	DINCH	Method
Hardness Shore A(10 sec)	79.2	78.5	82.1	82.0	ASTM D 2240
Plasticization Efficiency	1.01 (Good)	1.00 (Standard)	1.05 (Bad)	1.04 (Bad)	ASTM D 2240
Yellow Index	7.8	8.8	10.1	8.8	ASTM E 313
Transperance/Haze(%/%)	90.1/3.5	89.6/3.0	88.3/4.7	89.5/11.3	ASTM D 1003
Tensile strength(Kg/cm ²)	179	181	193	180	ASTM D 638
Migration(wt%)	0.07	0.04	0.71	0.20	ISO 177
Brittleness temperature(°C)	-33.4	-31.4	-32.2	-33.4	ASTM D-746
Weathering property	Good	Normal	Bad	Good	ASTM G-154
* Formulation(phr): PVC 100, Ba/Zn Stabilizer 2.0, ESO 2.0, Lubricant 0.5, Plasticizer 50					

<PSR>

	DEHCH	DOP	DOTP	DINCH	ASTM Method
BF Viscosity(20rpm, cps)	3,200	6,500	5,600	3,100	D-1824
Viscosity at 500 sec ⁻¹ (cps)	2,640	5,180	4,930	2,880	HCC Method
Gelling Speed	Good	Good	Bad	Bad	HCC Method
Low-Temperature Resistance (-15°C, 3hr)	Good	Good	Bad	Good	HCC Method
Foaming Property (cell uniformity)	Good	Good	Bad	Good	HCC Method
* Formulation(phr): PSR 100, Plasticizer 60					

