LUPEROX®

Methyl-ethyl ketone peroxides & Acetyl acetone peroxide

Introduction & applications

Luperox® methyl ethyl ketone peroxides (MEKPs) and acetyl acetone peroxide are used for the curing of unsaturated polyester resins and vinyl ester resins at ambient temperatures.

Luperox® DDM-9 methyl-ethyl ketone peroxide

DDM-9 phthalate-free MEKP offers the greatest flexibility of concentration range and pot-life, for use in a variety of ambient temperature cure applications. It is used by most UPR polyester resin producers for standardization because of its consistent lot-to-lot activity. Low hydrogen peroxide content makes Luperox® DDM-9 ideal for use in gel coats.

Luperox® Delta X-9 methyl-ethyl ketone peroxide

Delta X-9 is a phthalate-free MEKP used to give faster gel and cure times in a wide variety of ortho and isophthalic resin systems.

Luperox® DHD-9 methyl-ethyl ketone peroxide

DHD-9 is a faster form of phthalate-free MEKP offering outstanding performance in certain vinyl ester and isophthalic resins.

Luperox® DDM-30 methyl-ethyl ketone peroxide

This dilute Luperox® DDM-9 helps ensure lower peak exotherm temperatures and helps users achieve very accurate metering.

Luperox® 224 acetyl acetone peroxide

224 offers rapid gel-to-peak in many resin systems, as well as longer pot life (compared to MEKP) in non-promoted resins. This is attractive in two-pot systems. 224 is not recommended for use in gel coats or certain vinyl ester resins.

Color options

Arkema's MEKPs are available with color added to help ensure even dispersion, especially during open-mold and spray-up application.

Clear

Arkema's clear MEKPs are for curing of colored final products.
The colorless material ensures that there is no bleed in the final product.

Red

Arkema's red MEKPs allow the user to determine without a doubt that the resin has been completely catalyzed.

Disappearing Red (DR)

Arkema's DR MEKPs have an intense initial color, as an indicator that the resin has been completely catalyzed.
The dye will fade in less than 1 hour, leaving no residual coloration to the finished product.

Gel time effects of varying peroxide concentration: orthophthalic resin with 0.05% of 6% cobalt solution (@ 25°C)

peroxide (%)	Luperox® DDM-9	Luperox® Delta X-9	Luperox® DHD-9	Luperox® DDM-30	Luperox® 224
1.0	24.4	12.8	18.3	43.5	15.0
1.25	22.8	10.2	16.0	36.6	12.9
1.50	19.8	9.4	12.7	24.9	10.5

Gel time effects of varying promoter concentration: orthophthalic resin, 1% peroxide (@ 25°C)

promoter (%)	Luperox® DDM-9	Luperox® Delta X-9	Luperox® DHD-9	Luperox® DDM-30	Luperox® 224
0.050	24.4	12.8	18.3	43.5	15.0
0.075	18.9	9.1	13.9	33.0	13.5
0.100	15.1	7.4	12.1	29.5	10.4

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Standard formulation: Luperox® methyl ethyl ketone peroxide solutions

	Luperox® DDM-9	Luperox® Delta X-9	Luperox® DHD-9	Luperox® DDM-30	Luperox® 224
CAS #	1338-23-4				37187-22-7
description	mixture in organic diluent	mixture in organic diluent	mixture in organic diluent	mixture in organic diluent	mixed organic diluent
form	clear oily liquid	clear liquid	clear liquid	clear liquid	light yellow liquid
SADT (°C/°F)	75 / 167	85 / 185	85 / 185	85 / 185	54 / 130
freezing point (°C/°F)	0 / 32	0 / 32	0 / 32	0 / 32	0 / 32
flash point (°C/°F)	95 / 203	100 / 212	74 / 165	78 / 172	84 / 183
specific gravity (20°C)	1.0088	---	1.0089	0.98	1.0747
active oxygen	**8.70 – 9.00 %**	**8.70 – 9.00 %**	**8.70 – 9.00 %**	**5.50 – 6.05 %**	**4.00 – 4.15 %**
available with red dye	■	■	■	■	
available with disappearing red dye	■		■	■	

Typical application data: unsaturated polyester resins & vinyl ester resins

	Luperox® DDM-9	Luperox® Delta X-9	Luperox® DHD-9	Luperox® DDM-30	Luperox® 224
1% peroxide, resin: orthophthalic, 0.05% of 6% cobalt solution					
gel time (min)	24.4	12.8	18.3	43.5	15.0
cure time (min)	35.7	22.0	30.4	63.9	20.7
peak (°F)	301	311	296	266	320
Barcol 934 hardness	42	42	35	33	42
1.5% peroxide, resin: isophthalic (prepromoted)					
gel time (min)	27.8	23.8	37.2	47.4	18.2
cure time (min)	33.1	28.8	44.7	55.7	22.1
peak (°F)	364	362	375	348	396
Barcol 934 hardness	30	38	28	30	20
1.0% peroxide, resin: vinyl ester, 0.2% of 6% cobalt solution, 0.08% DMA					
gel time (min)	15.2	16.6	12.6	18.7	> 60
cure time (min)	26.4	28.7	20.1	40.7	---
peak (°F)	311	304	327	131	---
Barcol 935 hardness	95	88	98	0	0

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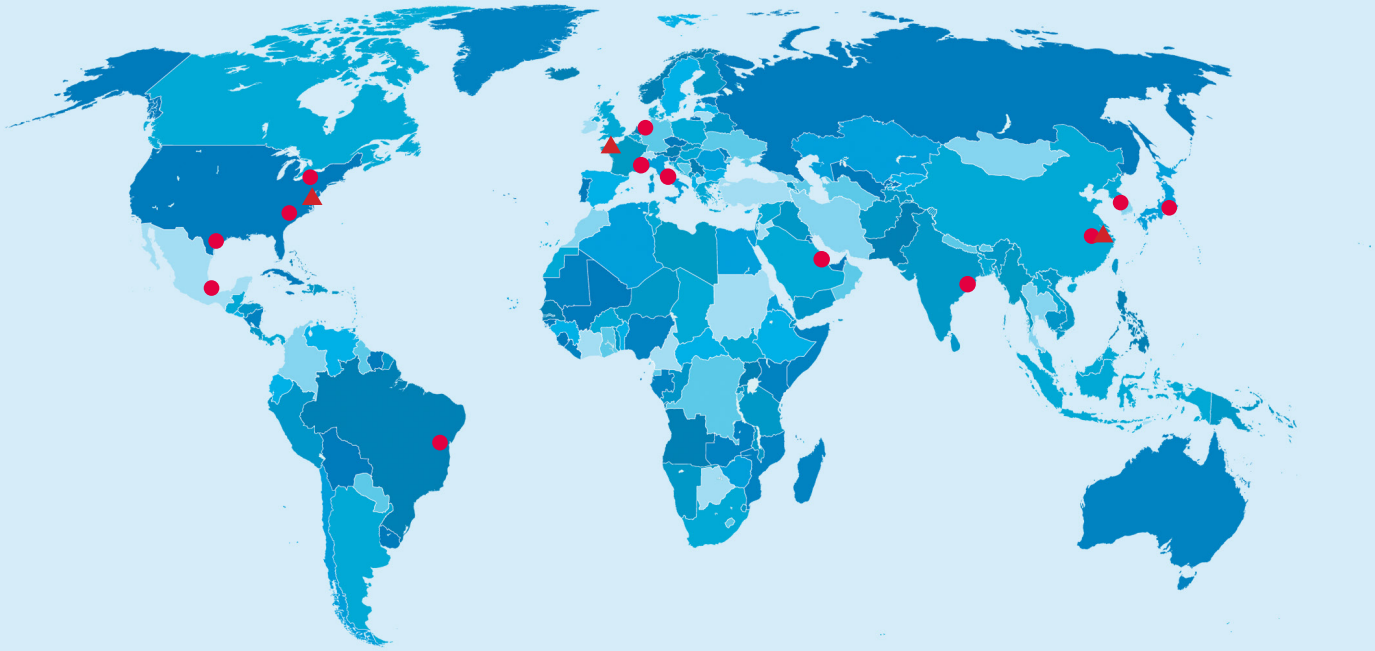
Luperox® Organic Peroxides Worldwide



- ● Organic Peroxides Plants
- ▲ Research Centers

- ● Piffard, NY
  Franklin, VA
  Crosby, TX
  Coatza, MX
  Rio Claro, BR
- ▲ King of Prussia, PA

- ● Gunzberg, DE
  Spinetta, IT
  Anagni, IT
  Jubail, KSA
  Cuddalore, IN
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NA-Marcom -bc/pp- 1-2016

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