LUCANT™

-Defoamer for paint and coating-

Mitsui Chemicals

NOTICE: All of the data are typical value, not specified

LUCANT™

LUCANT™ is a olefin-based oligomer.

Features of LUCANT™

- ✓ **Fully saturated aliphatic hydrocarbon**
- ✓ **Silicon free**
- ✓ **Solvent free** (Solvent cont. <0.1wt%)
- ✓ **Chemically stable** (Heat, oxidation, etc.)
- ✓ **Soluble in various non-polar solvents** (e.g. mineral oil, toluene, alkane)

Grade lineup of LUCANT™

			LX004	LX010	LX020	LX100	LX200	LX400
Appearance			C&B	C&B	C&B	C&B	C&B	C&B
Density	15°C	Kg/m^3	838	843	846	850	850	851
Kinematic Viscosity	40°C	mm^2/s	400	1,300	2,200	9,850	18,900	37,500
	100°C	mm^2/s	40	100	150	600	1,100	2,000
MWD	PSt std.		1.5	1.6	1.6	1.8	1.8	1.9
Glass transition temp.		°C	-77	-71	-69	-66	-65	-64
Flash point		°C	250	280	300	>300	>300	>300
Auto ignition temp.		°C	405	410	410	415	430	445
Iodine number		g-I_2/100g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acid number		mg-KOH/g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

C&B: Clear and bright

MITSUI CHEMICALS provides wide range of viscosity.

LUCANT™ for urethane coatings

For solvent-borne model systems on the urethane basis, LUCANT™ performs as a excellent defoaming agent.

- ✓ **LX004, LX010, and LX020 gives excellent defoaming performance, superior to commercially available silicone-based defoamer.**
- ✓ **LX010 gives enough performance with a dosage of 0.01%.**
- ✓ **LX100 and LX400 are recommended to use in dilution.**

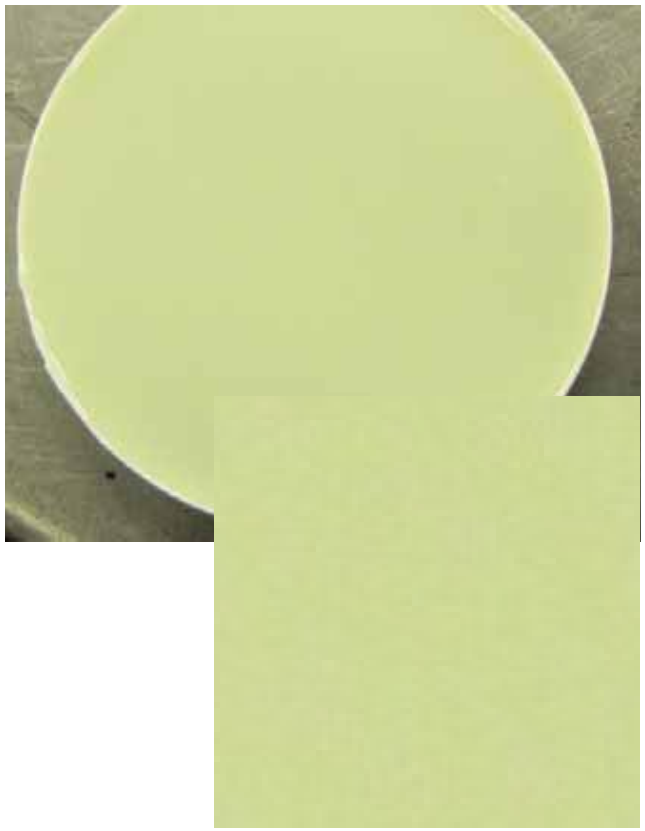
Test condition
[Formulation]
Urethane prepolymer/Curing agent/$CaCO_3$/DINP = 52/9/29/10
- Urethane prepolymer: Mitui Chemicals HIPRENE™ P-306 (NCO = 2.9wt%, 6000cps/25ºC)
- Curing agent: mixture of aromatic polyamine and polyether polyol (NH_2 = 3wt%, 1400cps/25ºC)
- Catalyst: tris-octanoic acid bismuth salt (dosage: 0.3wt%)

[Procedure]
1. Mixed curing agent with $CaCO_3$, DINP, and catalyst for 20min
2. Added LUCANT™ to the mixture and stirred for 1min
3. Added urethane prepolymer to the mixture and stirred for 3min
4. Casted the mixture in PP cup and left overnight

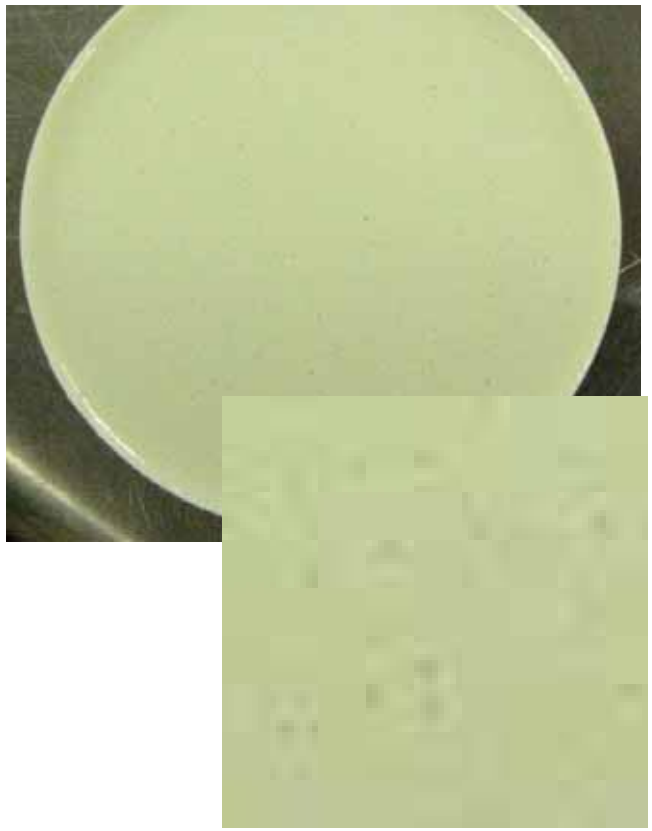
Comparison with commercial defoamer

Blank

LX010 0.3wt%



Si-based defoamer 0.3wt%



LUCANT™ LX010 gives superior defoaming performance to commercially available silicone-based defoamer.

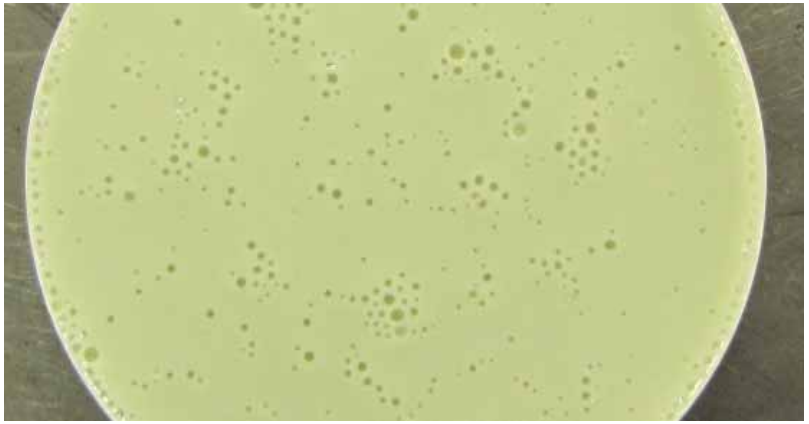
Dosage of LUCANT™ for urethane coatings

Blank	LX010 0.001wt%	LX010 0.01wt%

LUCANT™ LX010 gives effective defoamability with a dosage of 0.01%.

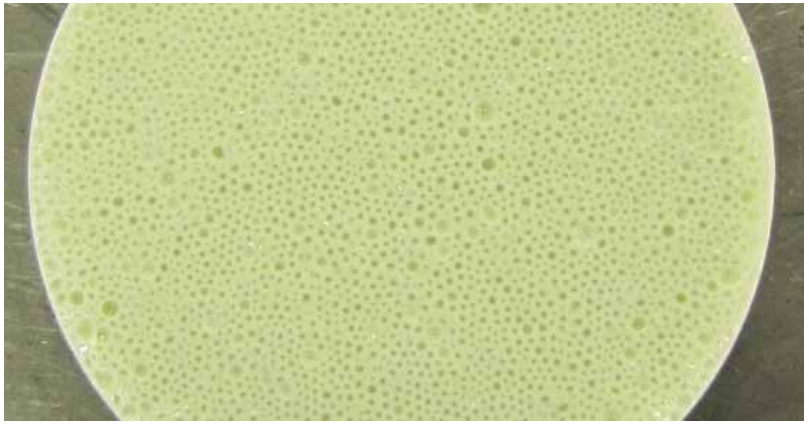
Dilution of LUCANT™ high viscosity grades

LX100
0.3wt%



LX100/Oil(30/70)
1.0wt%

LX400
0.3wt%



LX400/Oil(30/70)
1.0wt%

Oil: paraffinic mineral oil, kinematic viscosity (40 ºC) =102 mm^2/s

LX100 and LX400 gives good defoaming performance when diluted into mineral oil.

LUCANT™ for epoxy coatings

For solvent free model systems on epoxy coating, LUCANT™ performs as a excellent defoaming agent.

- ✓ **LX004, LX010, and LX100 works as an excellent defoaming agent.**
- ✓ **Each grades gives enough performance with a dosage of 0.5%.**

Test condition
[Formulation]
Epoxy resin/Curing agent = 50/10

[Procedure]
1. Mixed epoxy resin for 20min
2. Added LUCANT™ to the mixture and stirred for 3min
3. Added curing agent to the mixture and stirred for 30min
4. Casted the mixture in PP cup and left overnight

Performance of LUCANT™ for epoxy coatings

Blank

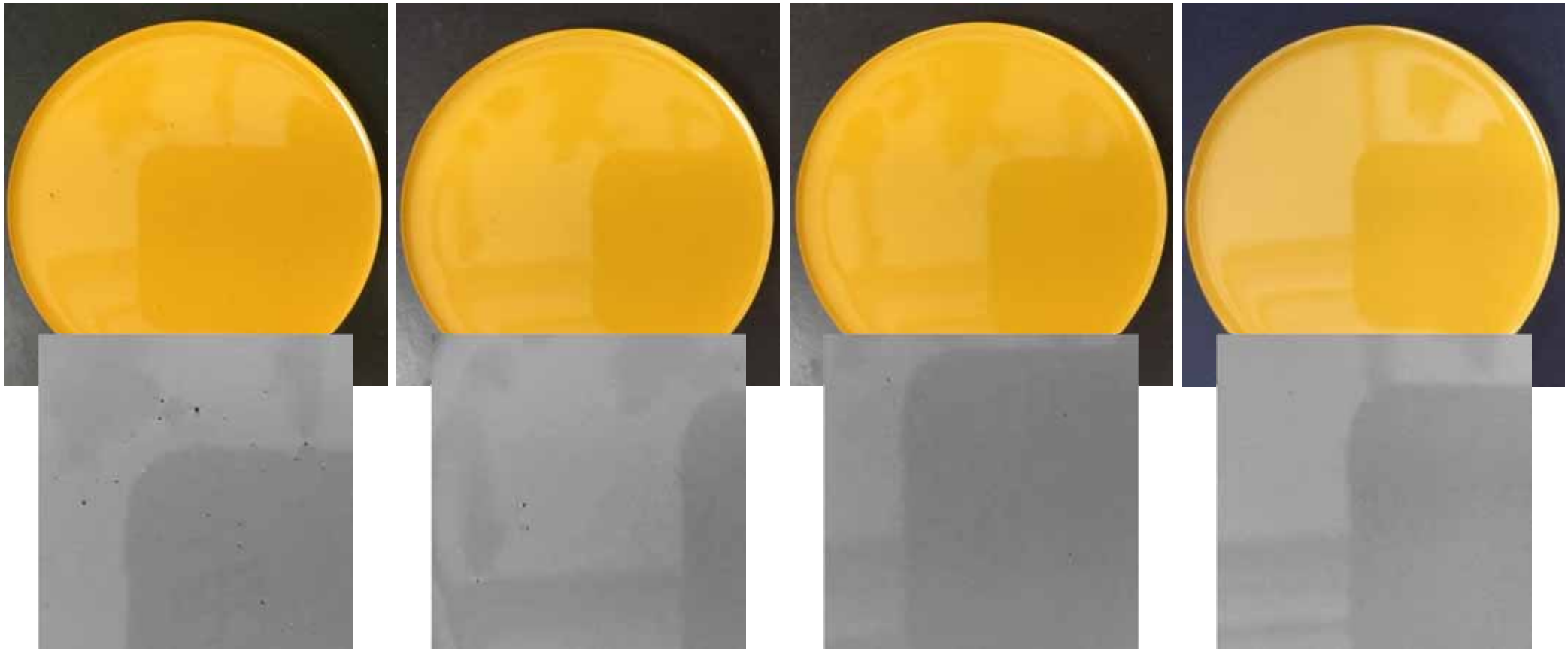
LX010 0.5wt%

LX010 1.0wt%

LX010 gives good defoamability with 0.5 wt% addition.

Comparison of LUCANT™ grades

Blank	LX004 0.5wt%	LX010 0.5wt%	LX100 0.5wt%



As defoamability of LUCANT™ has slight dependency on the grades, the optimal grade should be investigated.

LUCANT™ for paint and coatings

- ✓ **LUCANT™ is fully saturated aliphatic hydrocarbon, therefore is aromatic-free and silicon-free.**
- ✓ **LUCANT™ performs as an excellent defoamer in paint and coating applications.**
- ✓ **As lineup of LUCANT™ grades has wide range of viscosity, optimal grade can be chosen as the agent.**

Mitsui Chemicals

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MITSUI CHEMICALS, Inc.