



Santicizer Platinum G-2000 vs General Purpose Plasticizers

What is it?

Santicizer Platinum G-2000 is a biobased general purpose plasticizer.

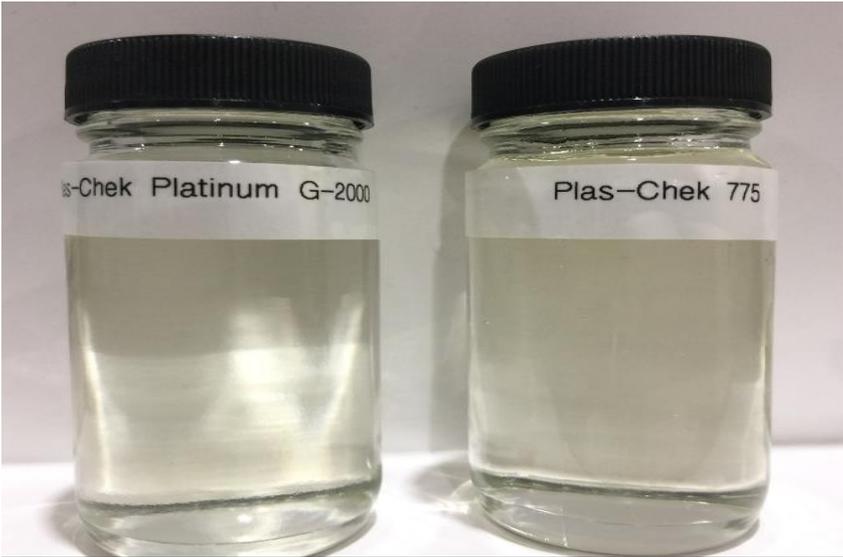
Other names: 2-Ethyl Hexyl Epoxy Soyate, Octyl Epoxy Soyate, 2-Ethyl Hexyl Epoxy Stearate or Octyl Epoxy Stearate

It has Bio-Content of 85% which means;

- It's a commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products or renewable domestic agricultural materials (including plant, animal, and marine materials) or forestry materials OR an intermediate feedstock.

Sales Specs:

Test	Specification
Appearance	Clear Yellow liquid
Moisture (% by KF)	0.3 max
Refractive Index (25°C)	1.4600-1.4700
Specific Gravity (25°C)	0.925-0.985
Acid Value (mgKOH/g)	1.0 max
% 2-EH ester	0.7 max



Handling instructions:

Material should be stored at Room Temperature.

Please note: We do not see any issues with material freezing unless kept below -10°F for extended periods of time.

Sample description	Neat Viscosity (cps @ 20 1/s)		
	0°C (32°F)	25°C (74°F)	50°C (122°F)
Santicizer® Platinum G-2000	45.87	16.84	7.29
ESO	261.2	53.35	18.69

Formulation and Testing Completed

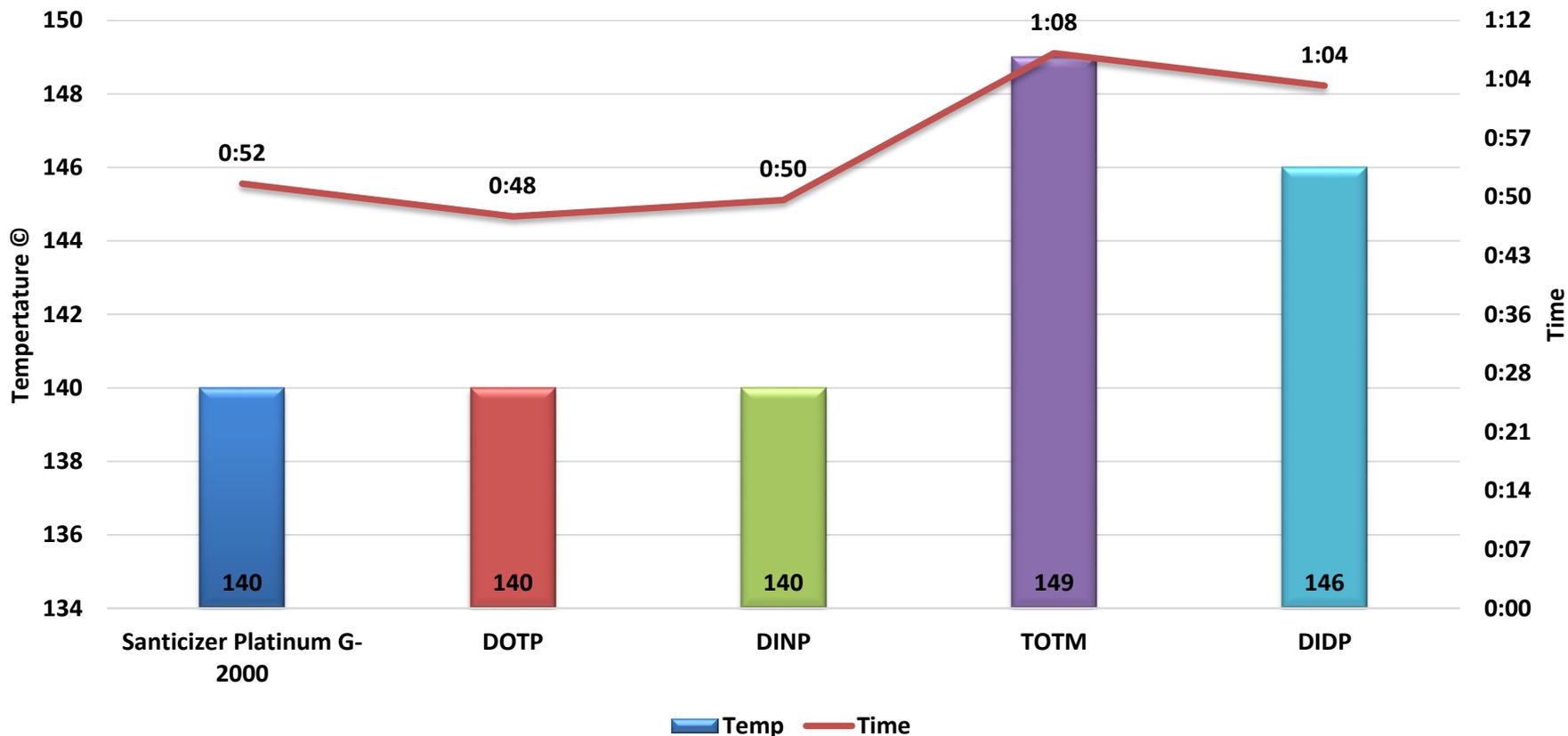
Component	phr
Oxy 225	100.00
Plasticizer	40.00
SP175	2.00

- Santicizer Platinum G-2000
- DOTP
- DINP
- TOTM
- DIDP

- Brabender Fusion
- Dry Up Time
- Haze
- Surface Energy
- Shore Hardness
- Tensile and Elongation
- Water Sensitivity
- Carbon Volatility
- Exudation
- Cold Temperature Flexibility
- Glass Transition
- Heat Stability

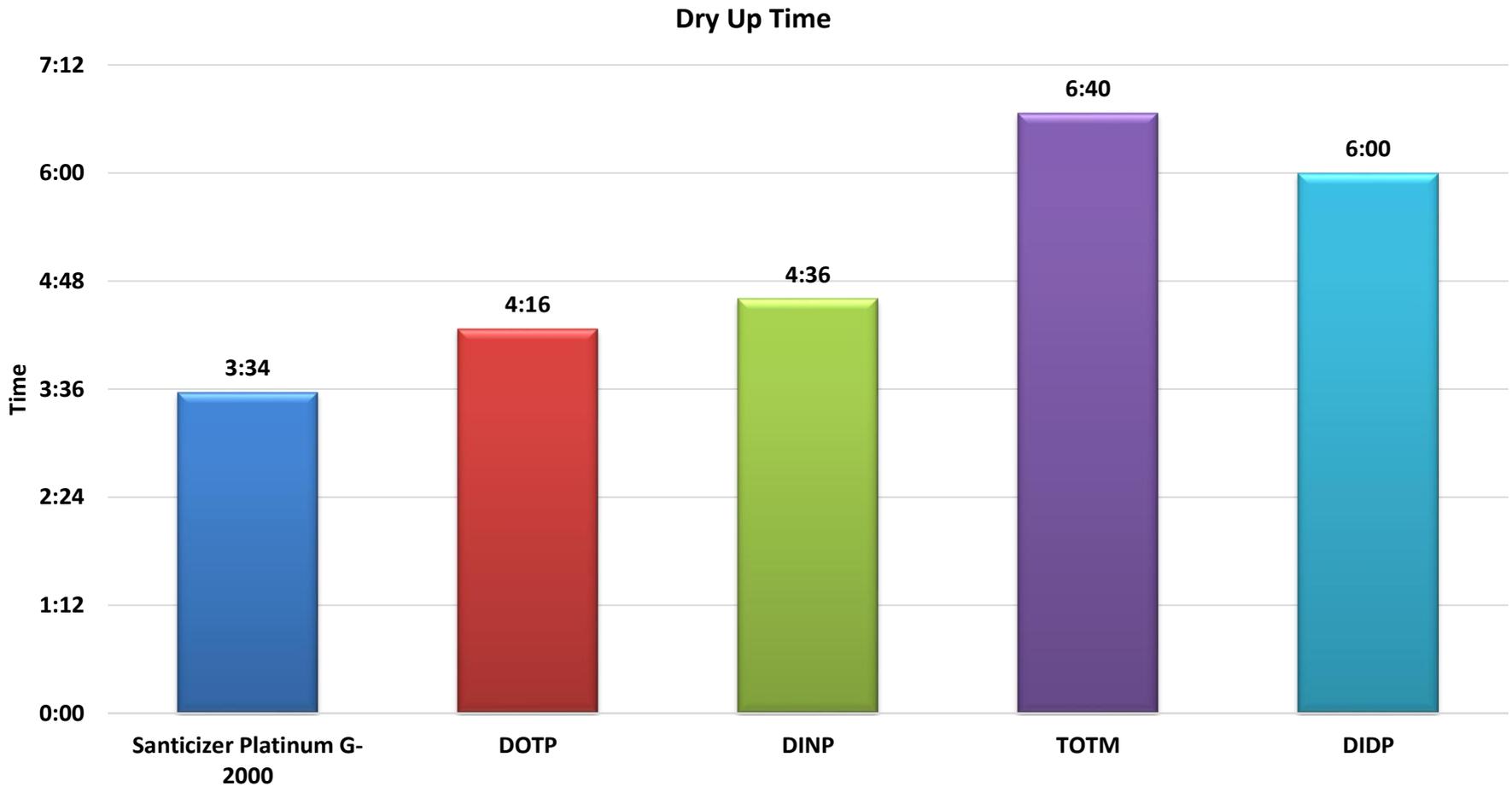
Brabender Fusion

Brabender Fusion



Santicizer Platinum G-2000 shows equal fusion time and temperature to DOTP and DINP, better fusion time and temperature VS TOTM and DIDP

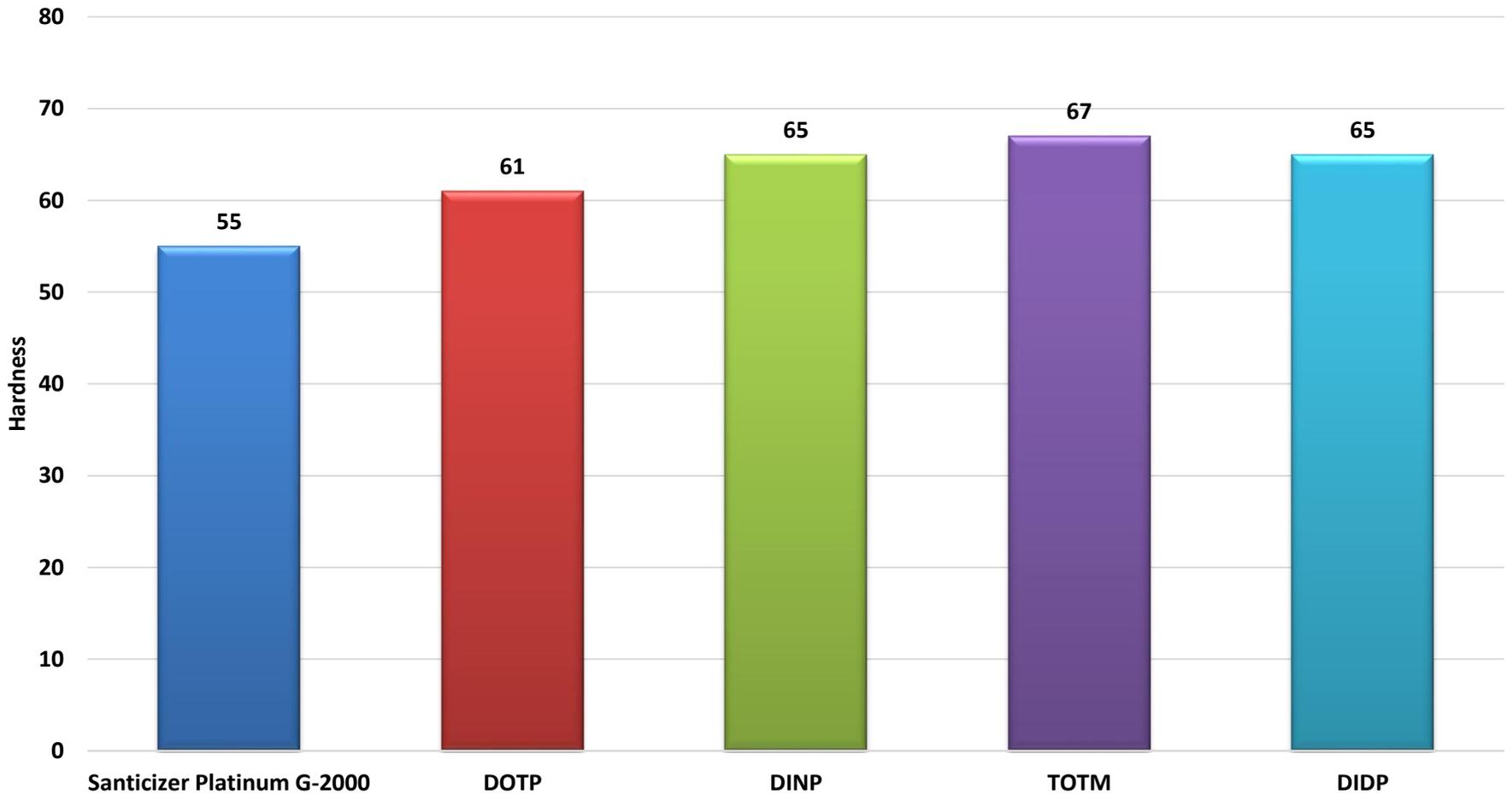
Dry Up Time



Santicizer Platinum G-2000 has the lowest dry up time.

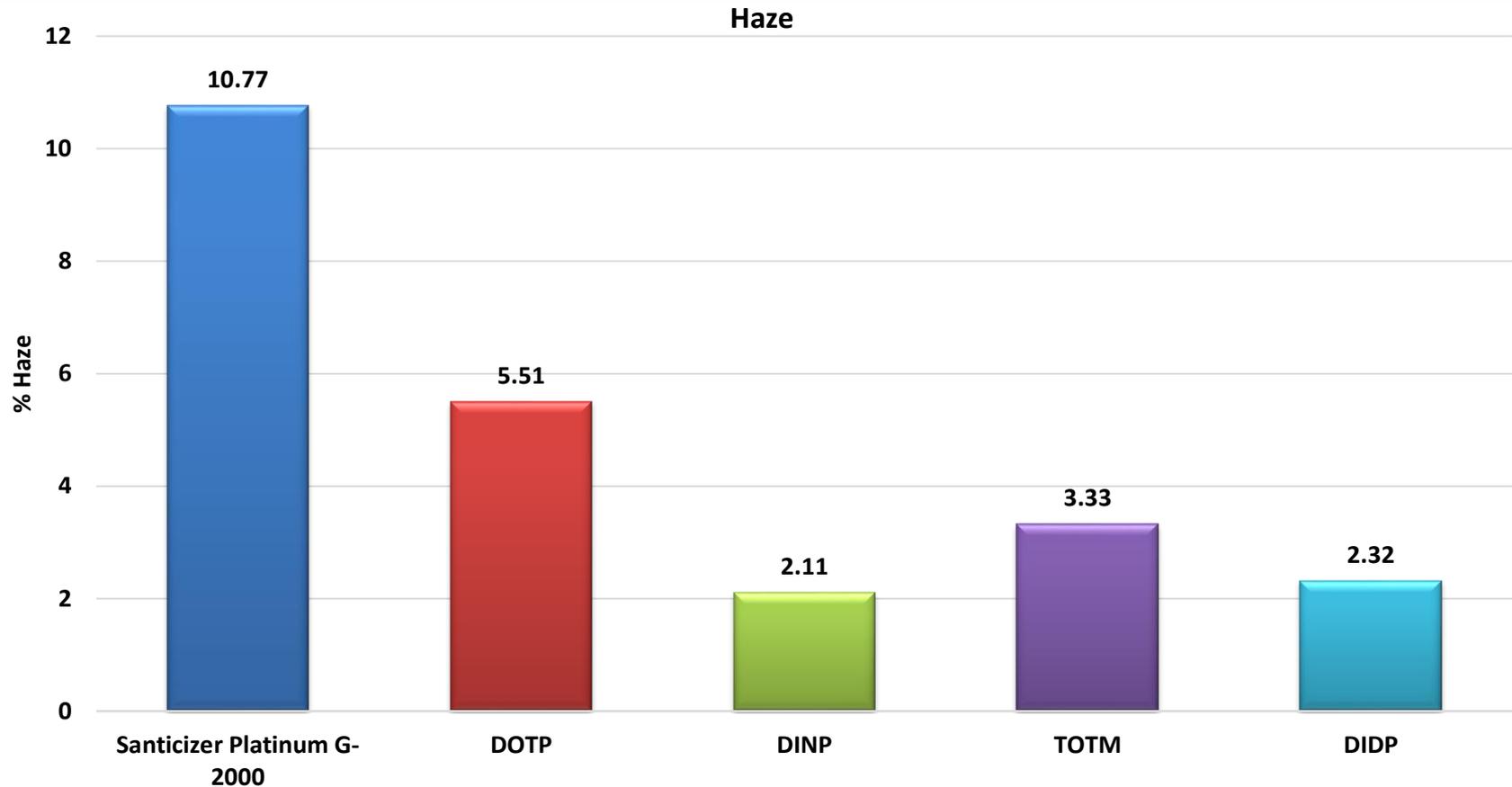
Shore Hardness

Shore D Hardness



Santicizer Platinum G-2000 is the most efficient plasticizer tested.

% Haze – BYK Haze Meter, 1/8 in plaques

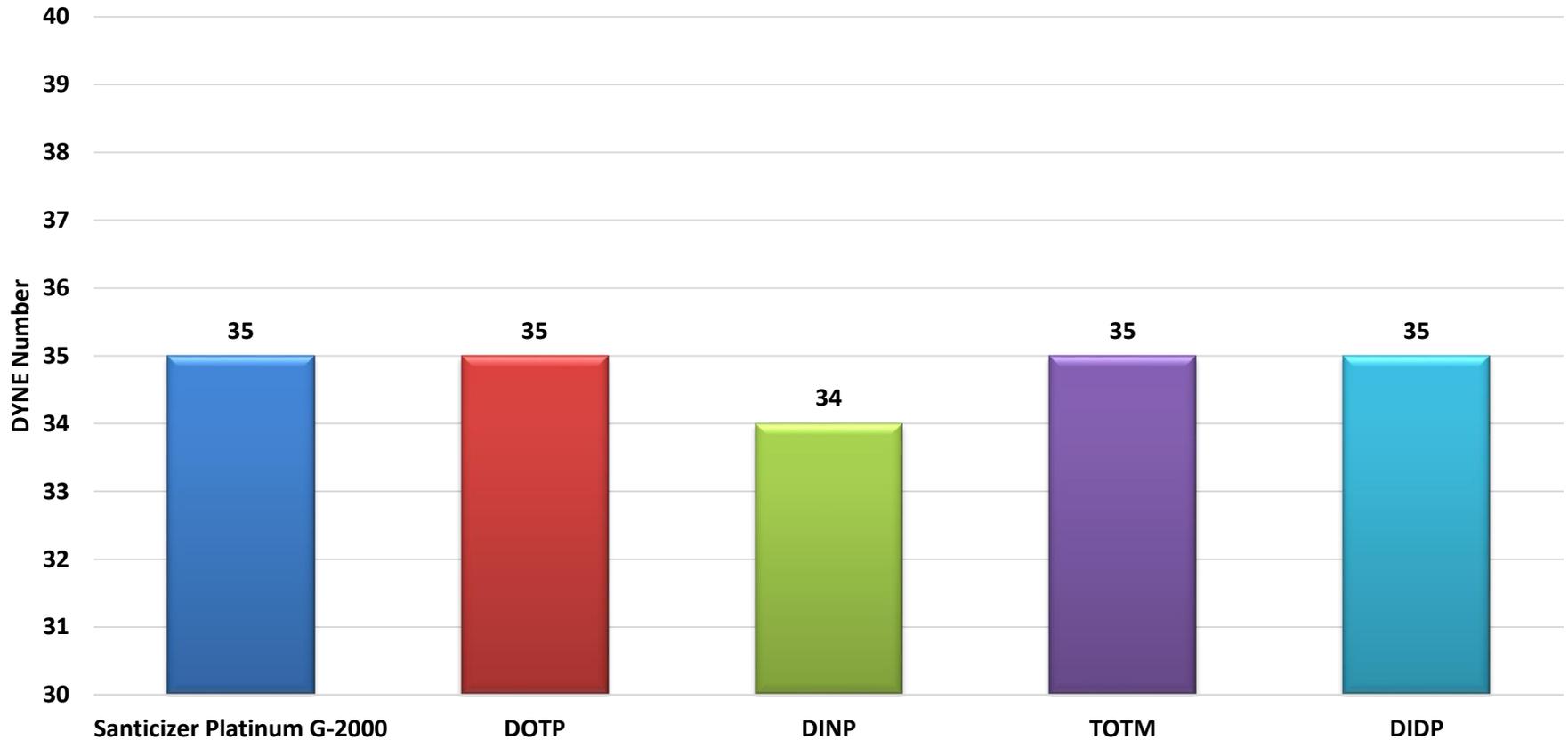


Santicizer Platinum G-2000 has the highest % Haze tested.

Please note: If you add a small amount of fast fuser (eg, 5 phr - Santicizer Platinum P-1400), % Haze readings are lower than General Purpose plasticizer control

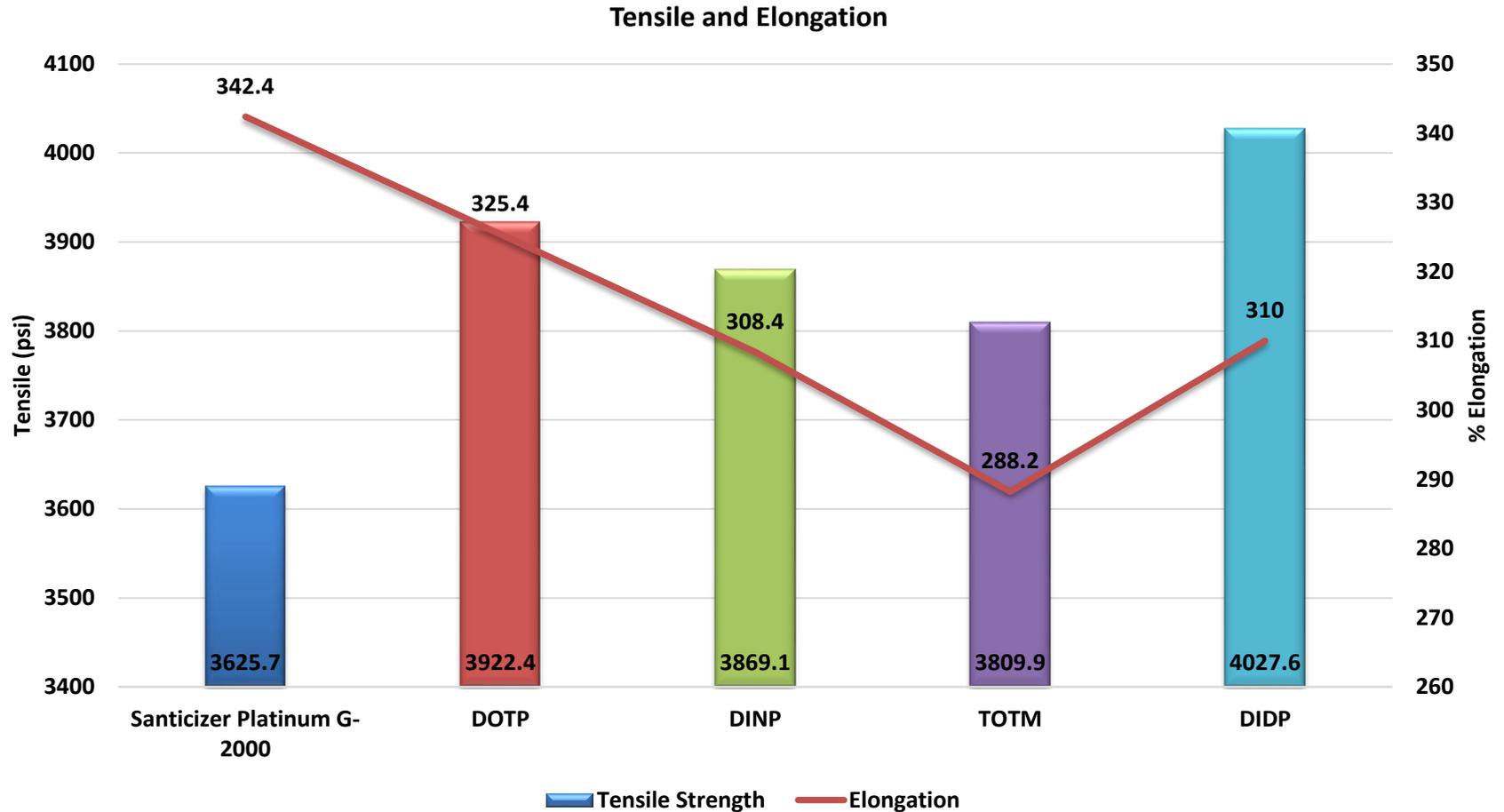
Surface Energy

Surface Energy



Surface Energy is equal between all samples tested

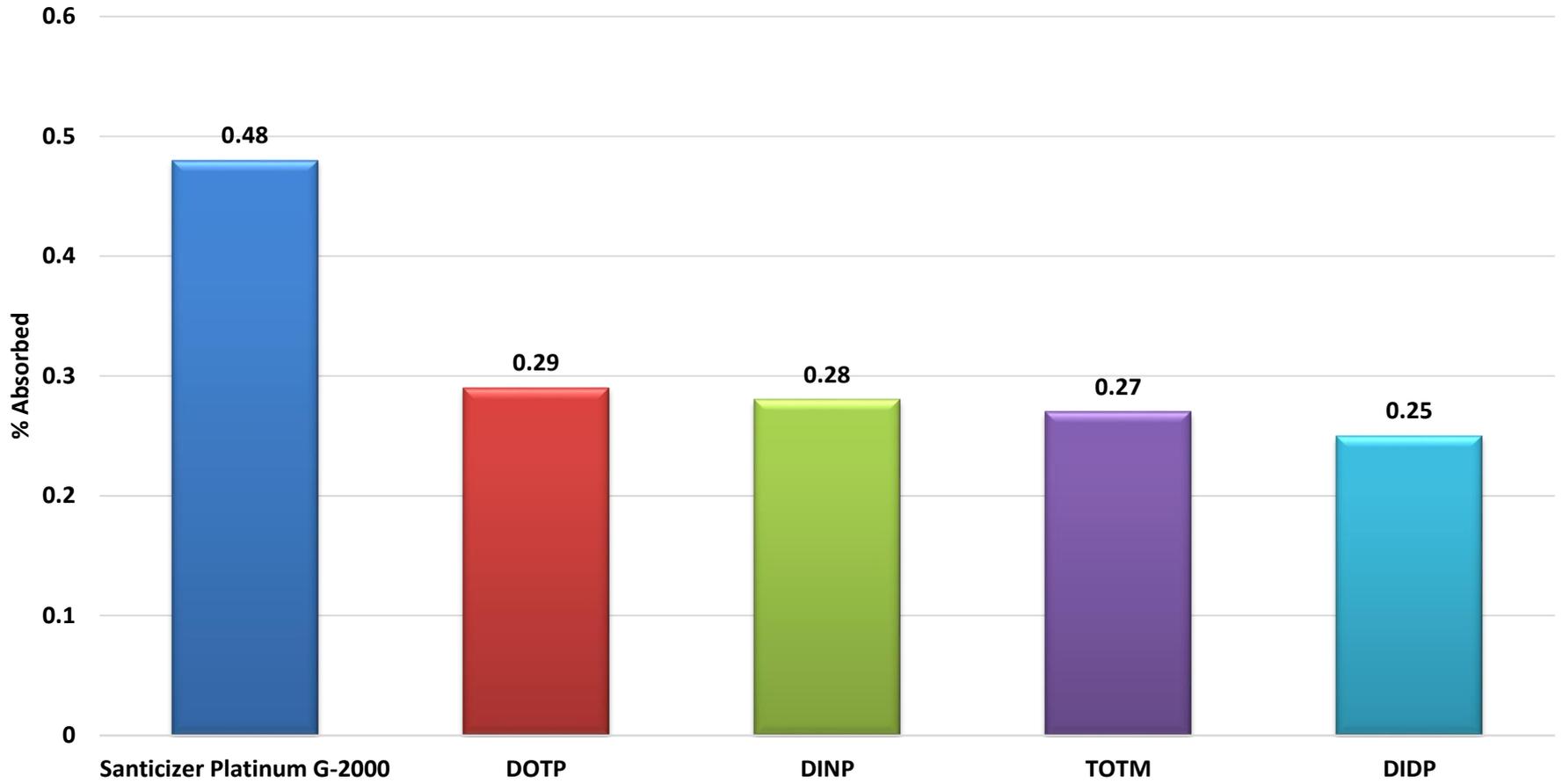
Tensile and Elongation



Santicizer Platinum G-2000 offers the highest % elongation

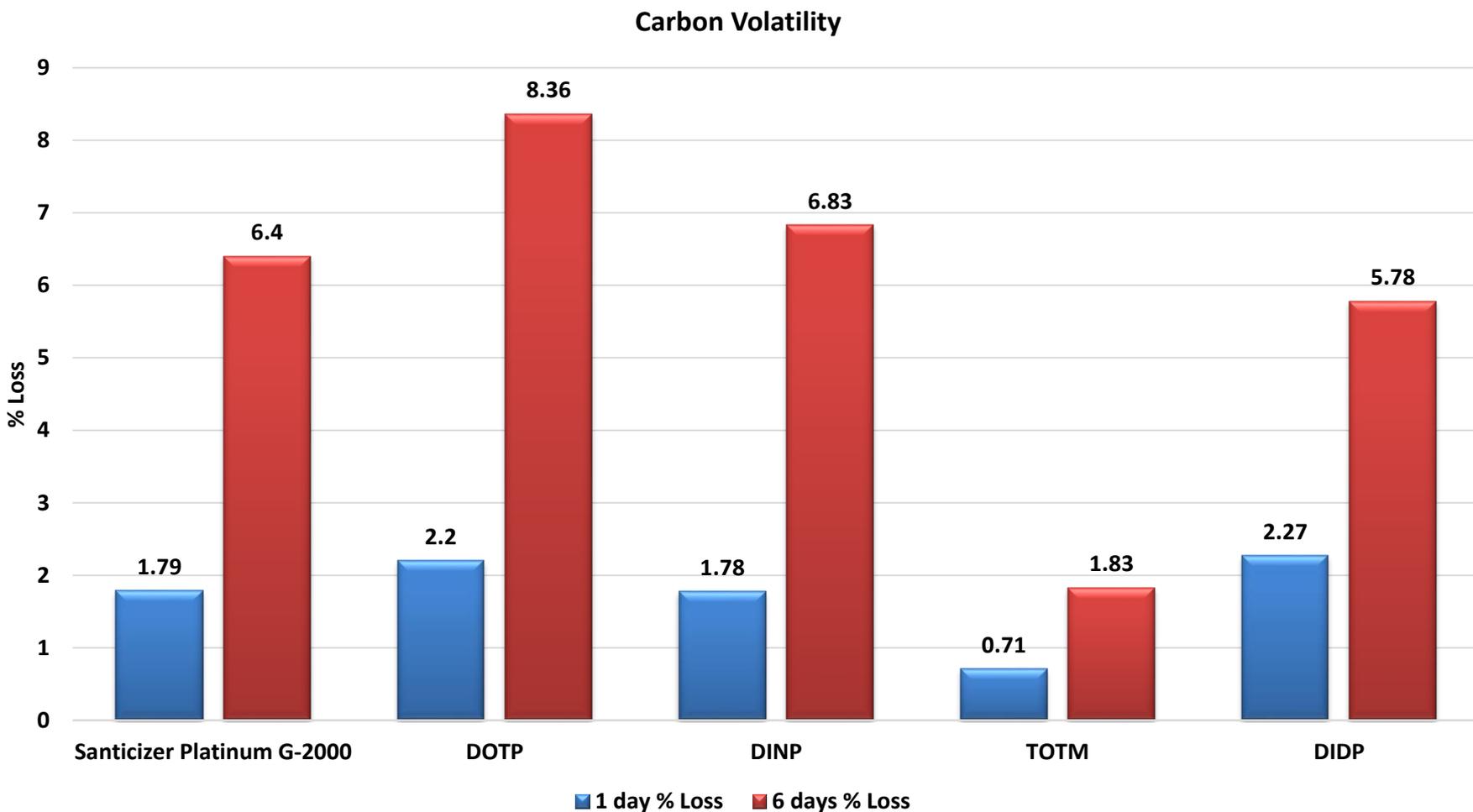
Water Sensitivity

Water Sensitivity



Santicizer Platinum G-2000 has a tendency to absorb water.

Carbon Volatility



Santicizer Platinum G-2000 is comparable for % plasticizer loss.

Exudation

	Loop exudation	
	1 day	7 days
Santicizer Platinum G-2000	0	0
DOTP	0	0
DINP	0	0
TOTM	0	0
DIDP	0	0

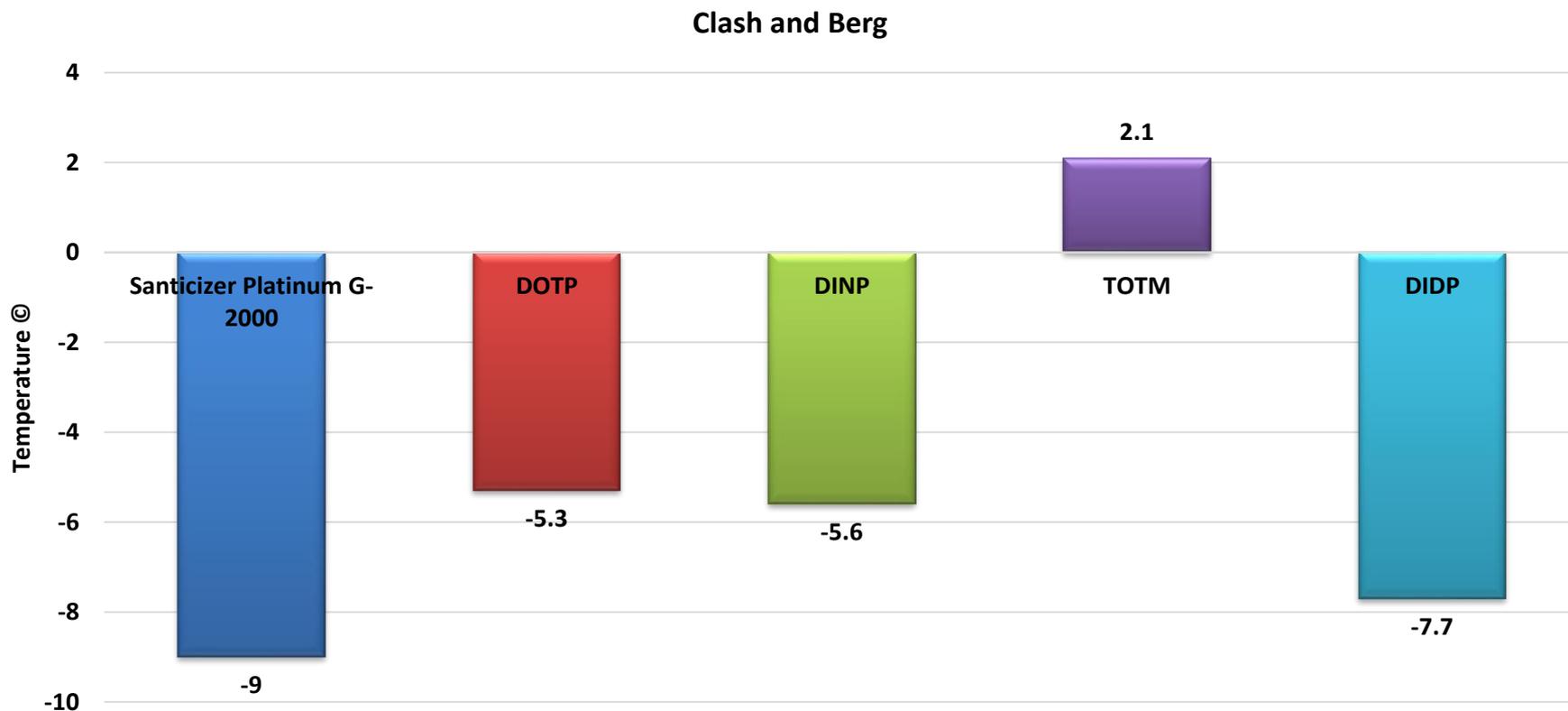
- 0 - None, dry
- 1 - Slight (tacky)
- 2 - Moderate (greasy)
- 3 - Heavy / Dripping

	SPEW Exudation			
	1 week	2 weeks	3 weeks	4 weeks
Santicizer Platinum G-2000	0	0	0	0
DOTP	0	0	0	0
DINP	0	0	0	0
TOTM	0	0	0	0
DIDP	0	0	0	0

- 0 - None, dry
- 1 - Slight (tacky)
- 2 - Moderate (greasy)
- 3 - Heavy / Dripping

Santicizer Platinum G-2000 is equal for exudation resistance in both loop and spew exudation

Clash and Berg: Cold Temperature Flexibility



Santicizer Platinum G-2000 has the lowest cold temperature flexibility properties compared to the other plasticizers tested

Plus/Minus Chart

Sample Description	Brabender Fusion	Dry Up Time	Shore Hardness	Haze	Printability	Tensile and Elongation
Santicizer Platinum G-2000	=	+	+	--	=	+
DOTP	=	=	=	-	=	=
DINP	=	=	=	=	=	=
TOTM	-	-	=	=	=	=
DIDP	-	-	=	=	=	=

Sample Description	Water Sensitivity	Carbon Volatility	Heat Stability	Exudation	Cold Temperature Flexibility
Santicizer Platinum G-2000	-	+	++	=	+
DOTP	=	=	+	=	=
DINP	=	=	=	=	=
TOTM	=	++	=	=	-
DIDP	=	=	=	=	=

Conclusions

- Santicizer Platinum G-2000 offers similar brabender fusion properties, has the lowest dry up time, and is the most efficient plasticizer tested.
- Santicizer Platinum G-2000 offers exceptional % elongation, surface energy is equal to the other plasticizers tested, and shows carbon volatility that is better than all the plasticizers except for the TOTM.
- Santicizer Platinum G-2000 offers exceptional heat stability compared to the other general purpose plasticizers tested.
- For Exudation resistance the Santicizer Platinum G-2000 performs as well as the other plasticizers tested and showed no concerns for exudation.
- The Santicizer Platinum G-2000 falls behind in % Haze and Water Sensitivity.
 - But these attributes can be overcome by addition a small amount of fast fuser, such as 5 phr of Santicizer Platinum P-1400.