Polymer Dispersions

Product line

Clariant

Exactly your chemistry.

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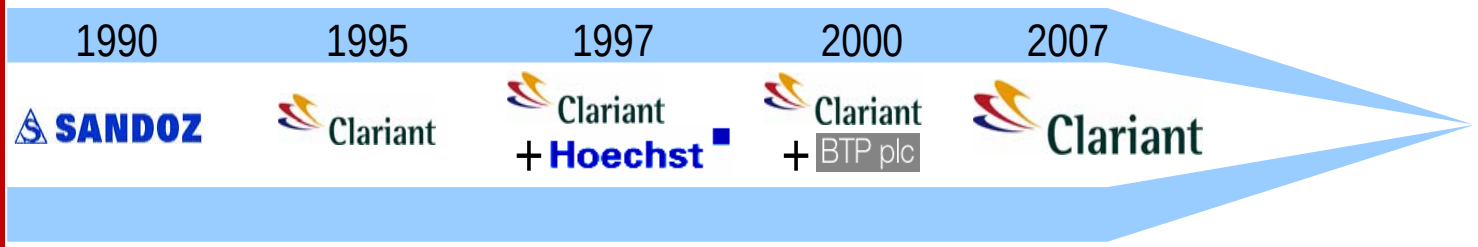
History of Clariant



- IPO in the summer of 1995 out of the Sandoz Chemicals Division
- Integration of the Hoechst specialty chemicals businesses in the summer of 1997

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Company structure

Textile, Leather & Paper Chemicals	Pigmentes & Additives	Functional Chemicals	Life Science Chemicals	Masterbatches
Textile Industry Leather Industry Paper & pulp Industry Polymer Dispersions	Coatings Industry Plastics Industry Printing Industry Specialized Industry	Detergent Industry Cosmetics Industry Oil and gas Industry Construction Industry Agro Industry Metal working Industry Mining Industry	Pharma Industry Agro Industry Manufacturers of coatings, plastics, flavor and aroma fragrances	Resin Producers Compounders Polymer Converters Manufacturers of industrial & consumer goods: carpets, textiles, cosmetics, detergents, food packaging, toys, cars, appliances

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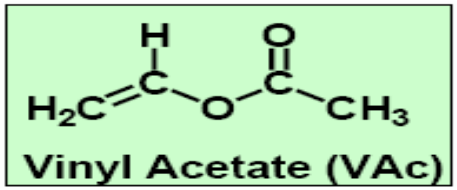
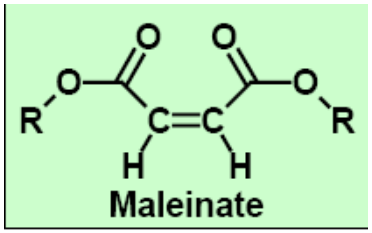
Clariant Emulsion History
科莱恩乳液发展史

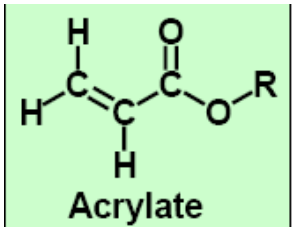
1912 赫斯特注册并开始生产乳液 **Mowilith®**

1934 赫斯特是第一个工业化生产聚醋酸乙烯乳液的公司

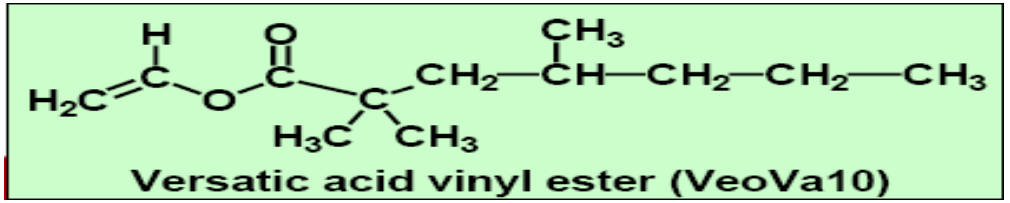


1950 赫斯特是第一个工业化生产聚醋酸乙烯分别和顺丁烯二酸酐及丙烯酸酯共聚乳液的公司





1960 赫斯特是第一个工业化生产醋叔乳液的公司



Clariant Polymer Dispersions production sites in the world （19 Plants)

*3rd Party manufacturing for us

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Clariant Polymer Dispersions in Asia
Some Facts and Figures
科莱恩乳液在亚洲

1965 Start selling emulsions in Asia (ex. Europe)
开始在亚洲销售Mowilith® 乳液(欧洲进口)

1973 Start producing emulsions in Asia (Indonesia)
开始在亚洲生产Mowilith®乳液（印尼）

2004 Start producing emulsions in China (leather)
开始在中国生产乳液（供皮革用）

2005 Start producing Mowilith® emulsions for Coatings in China
开始在中国生产涂料用乳液

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Summary 总结

- Clariant has a long history of producing emulsions

  科莱恩有悠久的乳液生产历史

- Clariant has a strong position as supplier of emulsions to the coating industsry in countries where we have production capacity but not yet in China

  作为涂料工业用乳液供应商，科莱恩在很多国家是涂料厂商的最佳合作伙伴。

  → Actions required for China

  在中国，我们将要推广的产品会有以下部分：

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Next Presentation……
接下来的介绍是……

- VeoVa全能型乳液

  Mowilith® VeoVa universal emulsion

- 水性木器漆用乳液

  Mowilith® emulsion for water-based wood coatings

- 水性防火涂料用乳液

  Mowilith® emulsion for fire retardant coatings

- 弹性涂料用乳液

  Mowilith® emulsion for elastomeric wall coatings

- 用于建筑领域的其他乳液

  Mowilith® emulsion for construction

Polymer Dispersions
May 25th, 2007

Elastomeric Coating

弹性涂料

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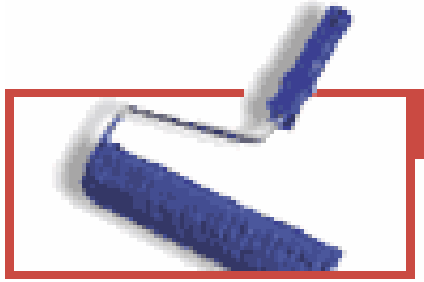

Mowilith® emulsions for the paint industries

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内容 Contents

- 弹性涂料基础理论

  Basic of Elastomeric Coatings

- 产品介绍

  Introduction of product

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ELASTOMERIC coatings

can be categorized as “exterior“ coatings with special character / properties required

弹性涂料可以归为带特殊性能的“外用”涂料，包括

I. **EWC** (= **E**lastomeric **W**all **C**oatings)

II. **ERC** (= **E**lastomeric **R**oof **C**oatings)

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Introduction

exterior wall paints *don't only have a decorative function but also provide protection against environment conditions which caused aesthetically and technical damages (e.g "crack" formation)*

外墙漆不仅要有装饰的功能，且能提供保护作用，抵抗由环境条件引起的破坏（如裂纹）

-important properties-

重要性能有

-outdoor durability户外耐久性

-rain proof and hue resistance防雨和耐色变性

-water vapour diffusion capacity水汽扩散性

-resistance against algae and fungi防霉抗藻性

-low dirt pick-up 耐沾污性

-yellowing resistance 耐黄变性

= = > *amongst the exterior wall paints we can distinguish between traditional façade paints and*

the ***E****lastomeric* ***W****all* ***C****oatings* ***(EWC)***

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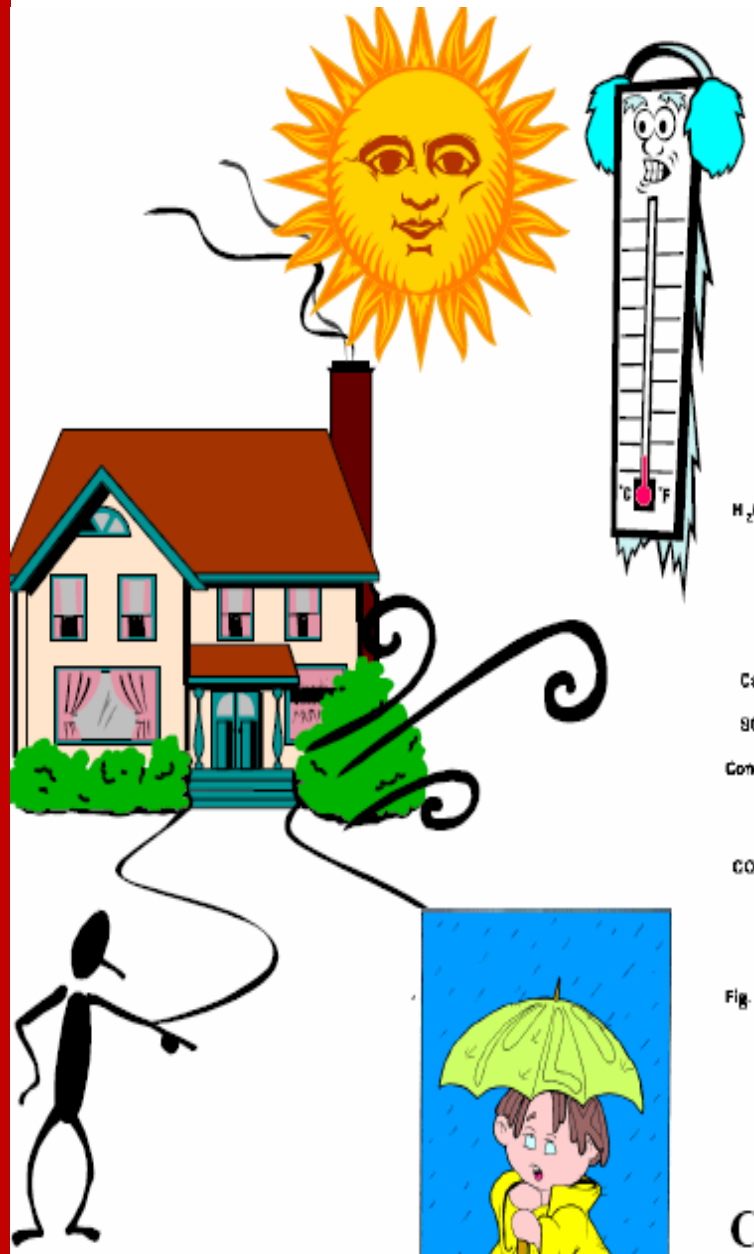

EXPANSION CRACKS

CO2 CARBONATATION

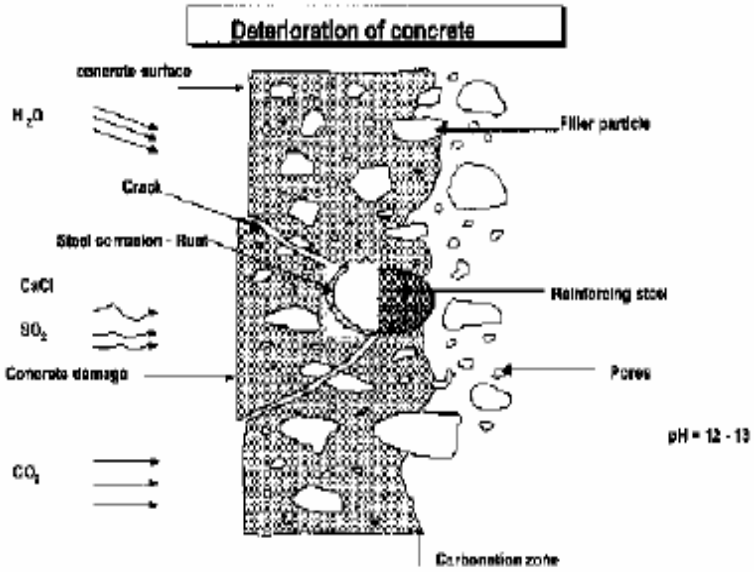

Fig. 8-32 Deterioration of concrete.

CAPILLARITY WATER CRACKS

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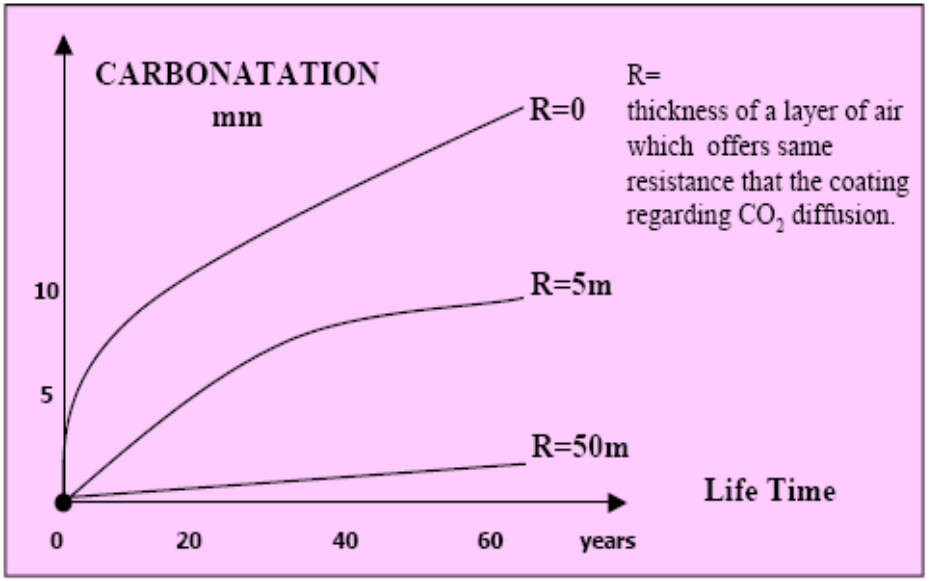


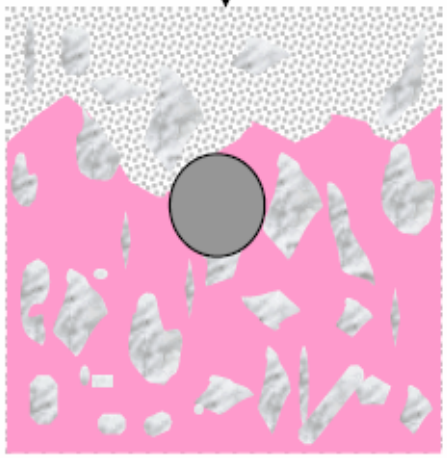
CARBONATATION

~ 1mm/Year

pH 12 to 9

oxidation

Rust Cracks Bursting



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test methods

- -elongation at break (%) 断裂伸长率
- -relaxation (%) 回弹率
- -crack bridging (mm) 遮盖裂缝的宽度
- -water vapor permeability (g/m2 ; 24 h) 水蒸气渗透性
- -water uptake (%) 吸水率
- -alkaline resistance 耐碱性
- -tack measurement (g) 粘着性
- -soiling resistance 耐污染性

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科莱恩在弹性涂料方面的研究历史

HISTORY

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1935 1955	Poly vinyl acetate + dibutyl phtalate Tg = 5-10°C	high water uptake high saponification
1950	Poly vinyl acetate Co dibutylmaleate	high water uptake
1984	Styrene acrylics + film coalescing agent Tg = 25°C	low water uptake low dirt pickup hard brittle
1985	Pure UV crosslinking acrylics Tg = -30°C	soft low tack

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科莱恩相对应的代表性产品

HISTORY

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Poly vinyl acetate + dibutyl phtalate Tg = 5-10°C	MOWILITH D 025
Poly vinyl acetate Co dibutyl maleate Tg = - 15 ° C	MOWILITH DM 2HB
Styrene acrylic + film coalescing agent Tg = 25°C	MOWILITH LDM 8405
Pure UVcrosslinking acrylics Tg = -30°C	MOWILITH DM 769F BV

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CLARIANT product range

目前在中国常用的弹性涂料用乳液产品有：

product name 产品名称	DM 767	LDM4101	LDM4102	LDM4104	LDM4105	LDM4108
-Tg 玻璃化温度 (ºC)	-6	-10	-25	-25	-35	-15
-total solid content (%) 固含量	50	60	60	60	60	55
-UV cross-linked 是否UV交联	no	yes	yes	yes	yes	yes
-monomer base 单体类型	SA	A	A	A	A	SA

SA = Styrene Acrylic 苯丙 ； A = pure Acrylic 纯丙

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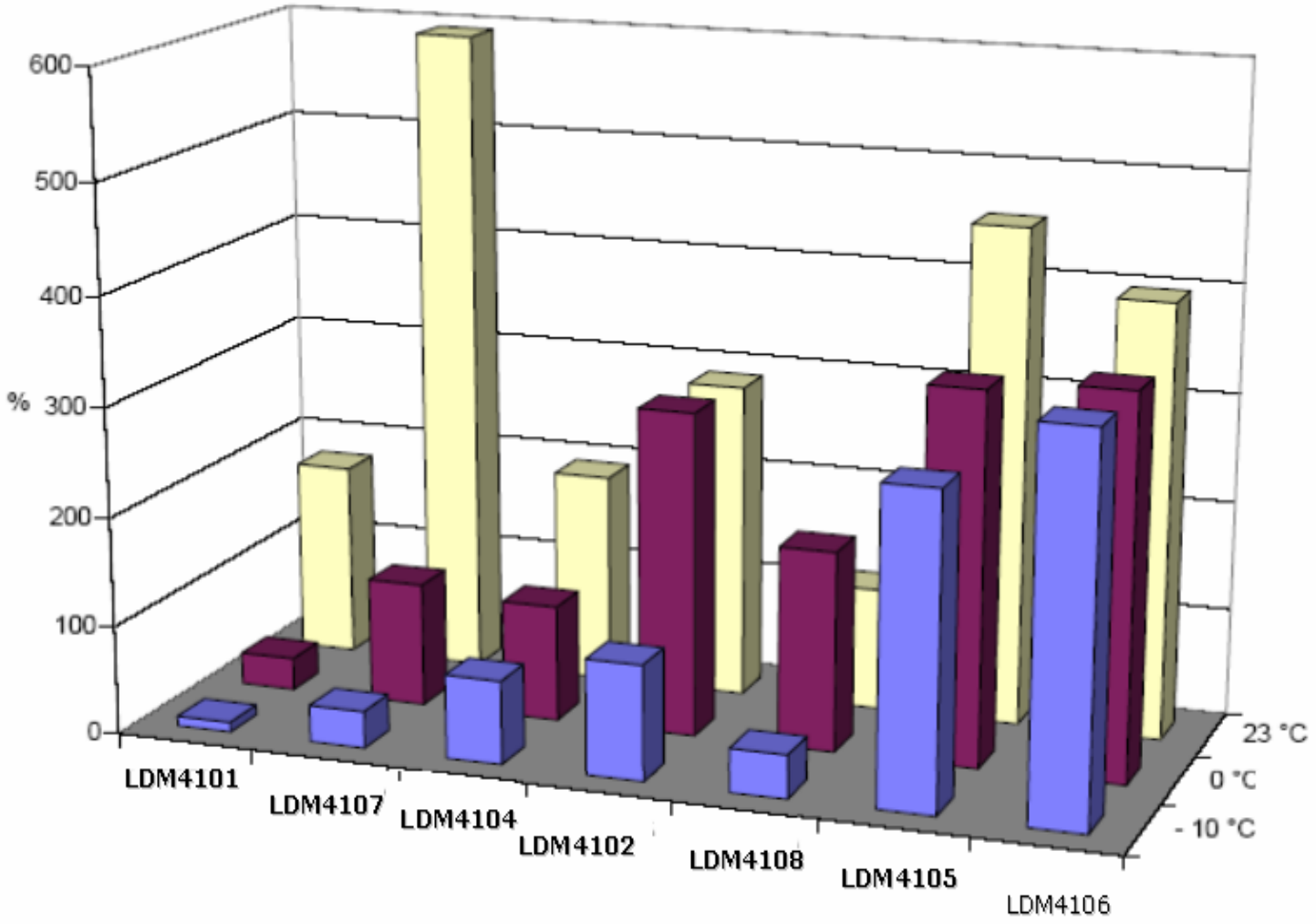
elongation at break (PVC of 42%)

拉伸断裂伸长率（PVC为42%）



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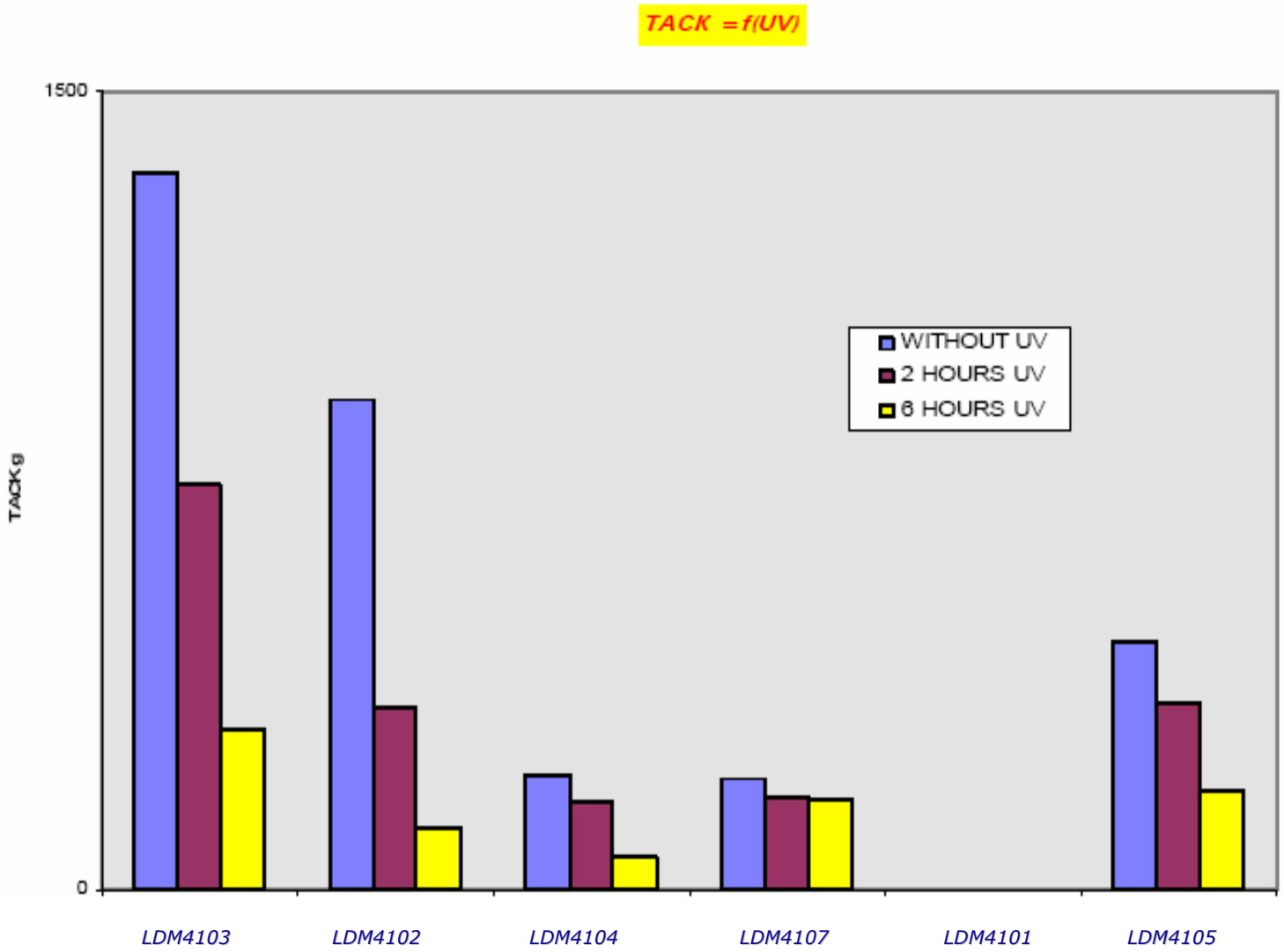
comparison of tack vs UV

UV 固化前后粘性的比较



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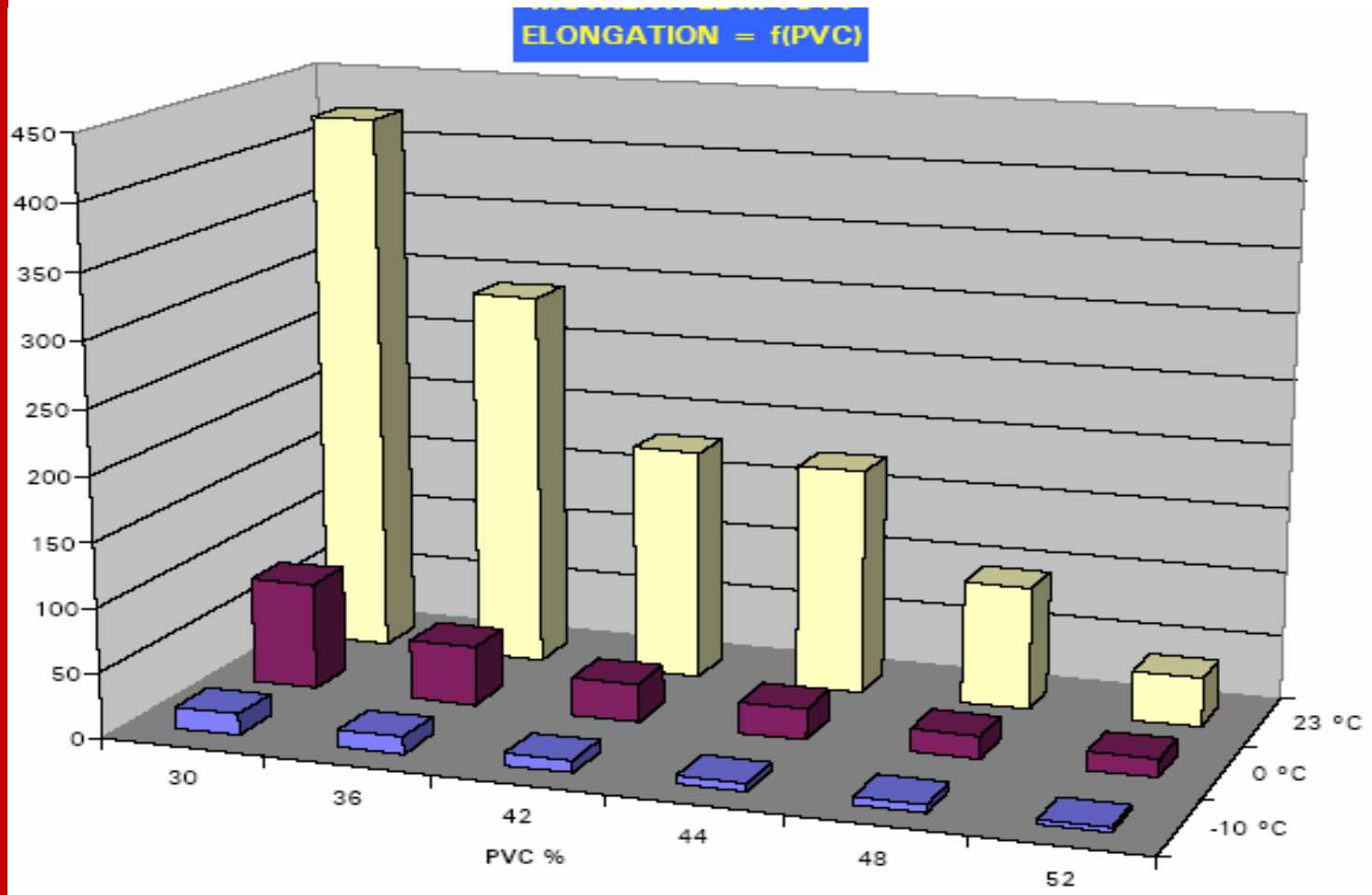
***Elongation** at **break** **vs** different **PVC** of Mowilith LDM 4101*

LDM 4101在不同PVC时的拉伸断裂伸长率



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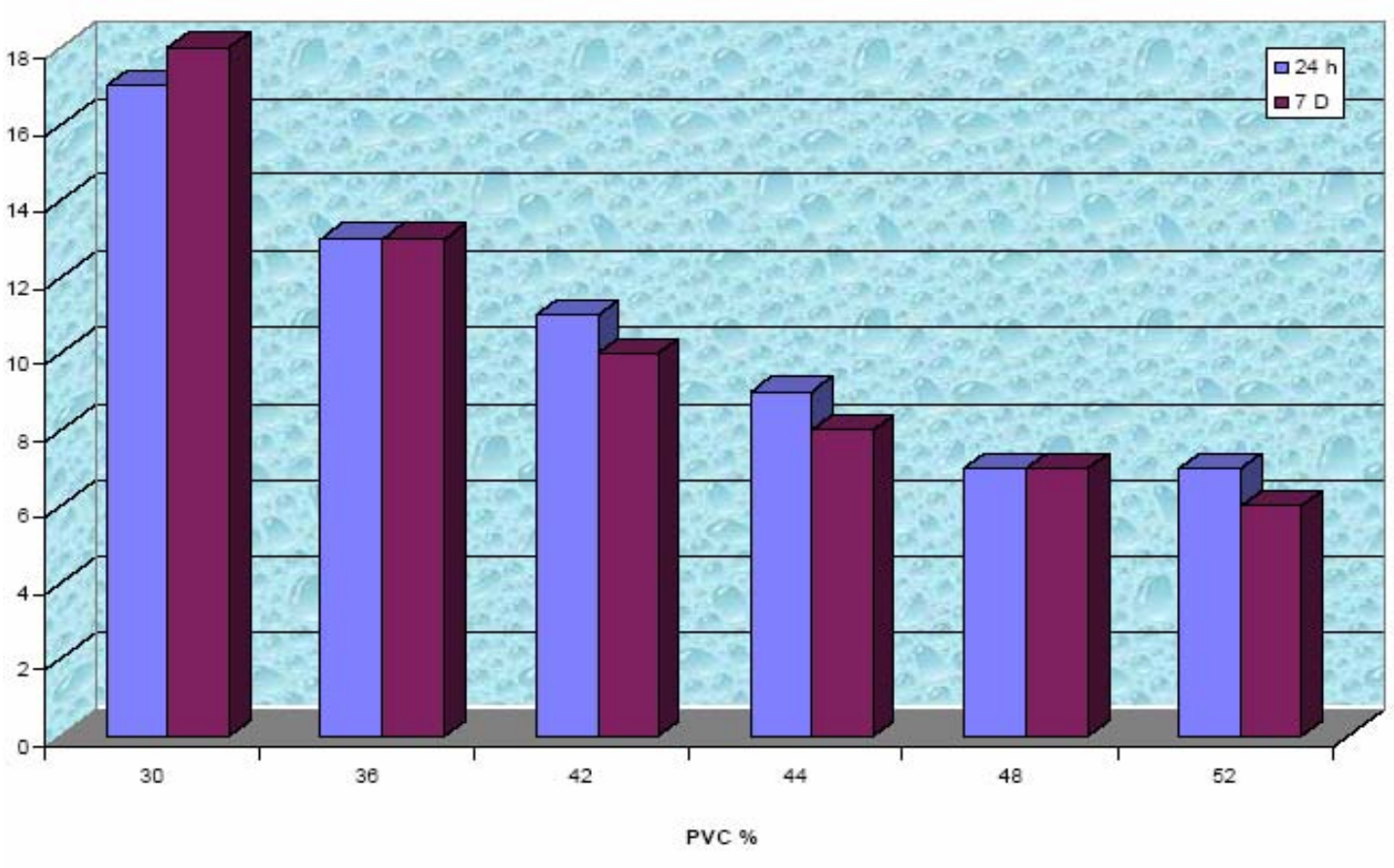
water up-take vs** different **PVC of Mowilith LDM4101

*不同**PVC** 下吸水率*



Clariant

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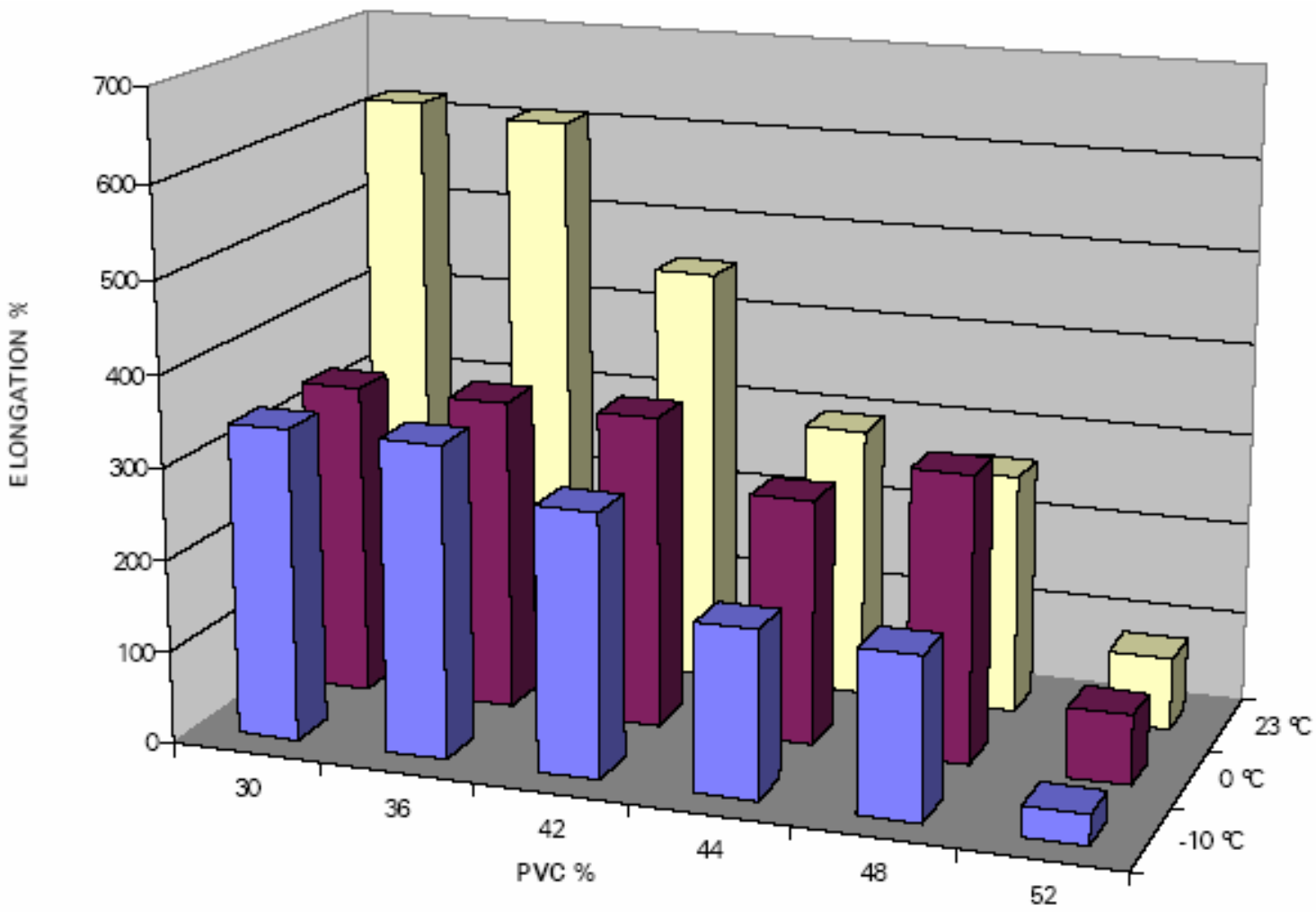
Comparison of Mowilith LDM 4105

elongation vs different PVC： *不同PVC下的拉伸率*



Clariant

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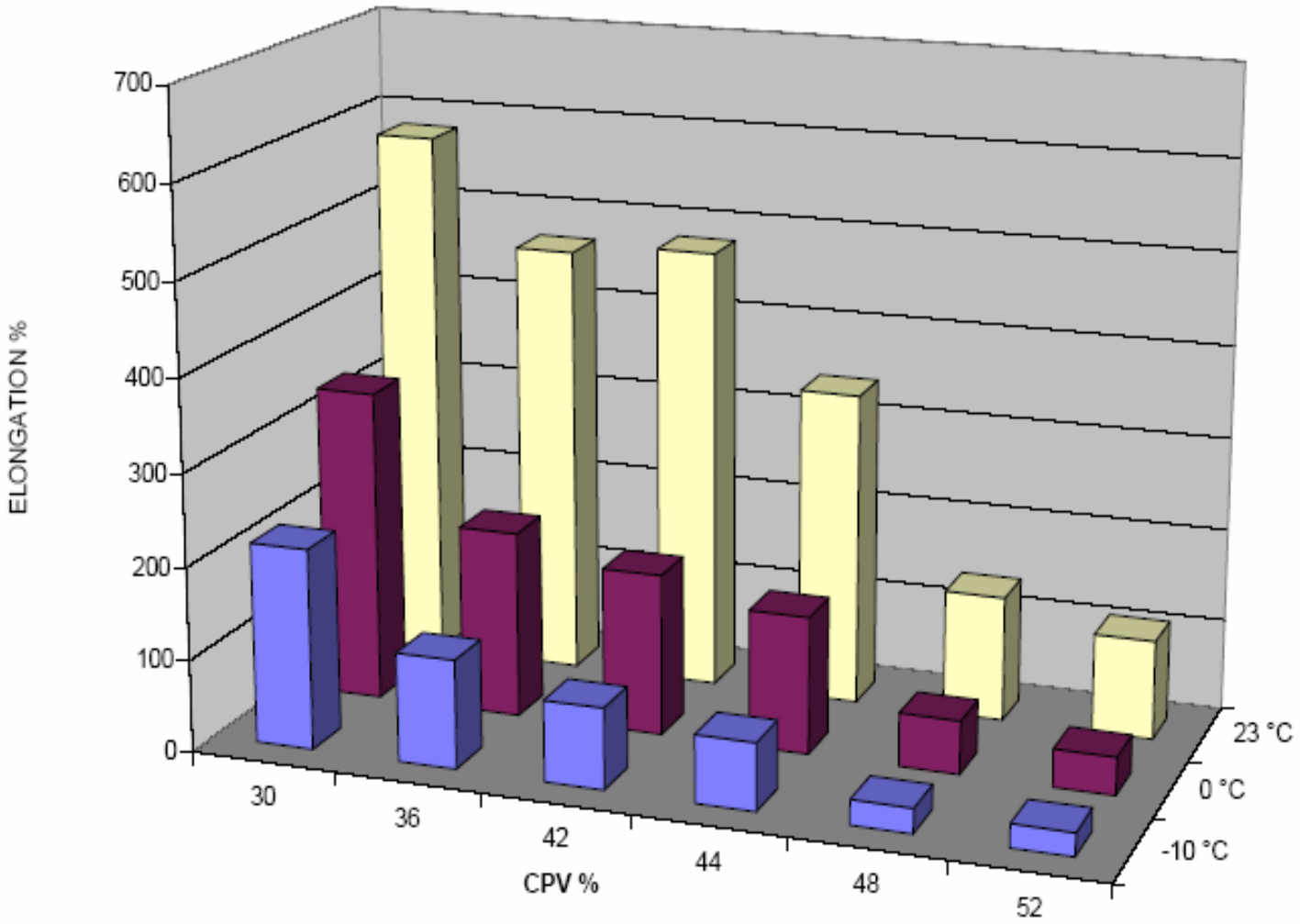
Comparison of Mowilith LDM4104

elongation vs different PVC：

不同PVC下的拉伸率



Clariant

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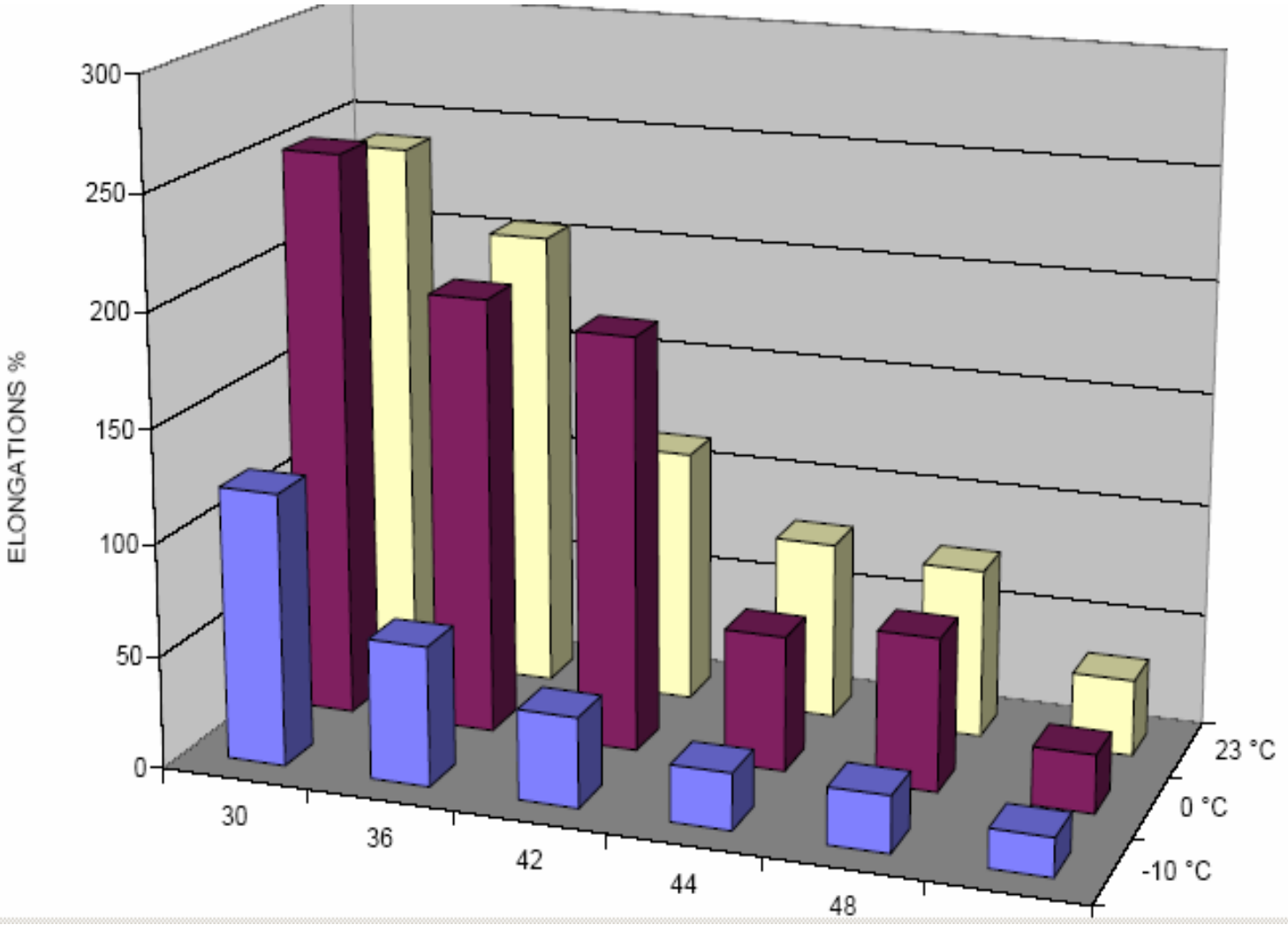
Comparison of Mowilith LDM4108

elongation vs different PVC：不同PVC下的拉伸率



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GUIDANCE FORMULA 参考配方

Elastomeric Wall Coating (white) (recipe on Lab. scale)

		%
1. Water		10.46
2. SHMP 10% sol	(dispersing agent)	0.50
3. Mowiplus PDA 40S	**(dispersing agent)**	**0.14**
4. Byk–028	(defoamer)	0.20
5. Kronos 2190	(titaniumdioxide)	8.00
6. Omyacarb 2 LE	(calciumcarbonate)	38.00
7. Mowilith LDM4105		**38.20**
8. Ammonia (20% sol.)		0.10
9. Nipacide CFX3	(biocide)	0.20
10. White spirit	(solvent)	0.50
11. BCA	(coalescing agent)	0.20
12. Propylene Glycol	(solvent)	1.00
13. Water		0.75
14. Optiflo H6000	(associative-thickener)	0.75
–add as a mixture–		
15. Nipacide DFS	(dry film biocide)	1.00

		100.00

PVC ca.42%

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Your

Chemistry

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