

Application Data

Skin Hydration Test

Using Various Glycols

General

A skin hydration test was conducted on 20 female volunteers aged from 19 to 65. Each of the 6 test creams was applied on the legs of the volunteers who had a dry skin on that area (<70 u.a). A corneometer of courage and khasaka was used to measure skin hydration immediately after application and every hour thereafter during the six- hour test.

Glycols tested in the hand-cream are:

- MPDiol glycol
- 1,3 butylene glycol
- Propylene glycol
- Glycerin
- MPDiol glycol/glycerin (50/50)

A reference product in which the glycol was replaced by water was also tested to evaluate the relative hydration properties of the other ingredients.

The material tested is a hand-cream containing 10% glycol, with the following formulation:

<u>INCI Name</u>	<u>wt %</u>
Dimethicone	3
Cethyl alcohol	4
Glyceryl stearate	2
Cetearyl alcohol & sodium lauryl sulfate	7
Isopropyl myristate	5
Deionized water	67.8
Glycol	10
Preservative	1
Perfume	0.2

Hydration Averages

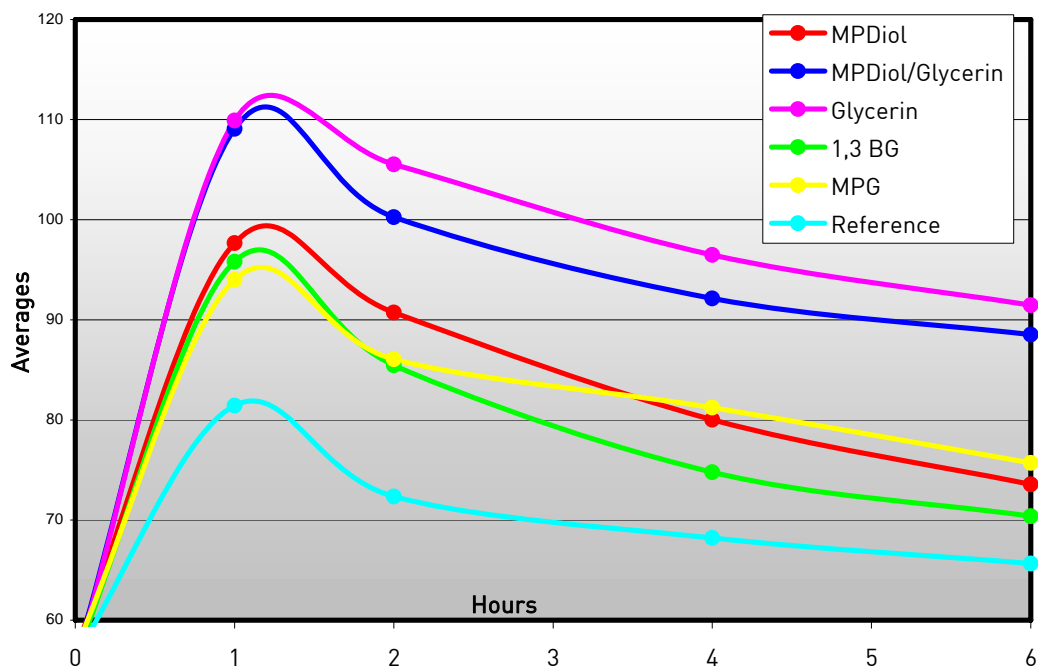
- All the glycols tested have a positive effect on the hydration efficacy of the cream.
- Glycerin is the most efficient in hydrating and maintaining hydration during 6 hours.
- MPDiol glycol, 1,3 butylene glycol and propylene glycol provide good hydration activity.
- MPDiol glycol is more efficient than 1,3 butylene glycol in hydrating the skin throughout the entire testing period.
- MPDiol glycol is more efficient than propylene glycol during the first 3,5 hours. For longer-term hydration, propylene glycol is slightly better than MPDiol glycol and better than 1,3 butylene glycol.
- A 50/50 blend of MPDiol glycol and glycerin produces an interesting synergistic effect: while the glycerin maintains a high level of hydration, the MPDiol glycol improves the skin feel of the cream by providing a smooth, non tacky feel.

Application Data

Skin Hydration Test

Using Various Glycols

HYDRATION AVERAGES



This information is believed to be accurate as of the date of publication. It is the sole responsibility of the customer to determine whether the product is appropriate and suitable for the customer's specific use. Specific end uses may require approval by appropriate regulatory agencies. Lyondell Chemical Company makes no warranties, express or implied, regarding the product or information contained therein. The applicable Material Safety Data Sheet should be reviewed by customer before handling the Lyondell Chemical product. Lyondell Chemical Company disclaims any liability for infringement of any patent by reason of customer's use of any Lyondell Chemical Company products in combination with other materials or in any process.

World Headquarters
Lyondell Chemical Company
1221 McKinney
Houston, TX 77010
Tel (713) 652-7200
Toll-free (888) 777-0232
MSDS Hotline: (800) 700-0946

European Headquarters
Lyondell Chemical Europe, Inc.
P. O. Box 2416
3000 CK Rotterdam
The Netherlands
Tel (31) 10 275-5500
Tel (33) 3 44 24 92 05 (tech svc)

Lyondell South America
Av Roque Petroni Jr,
999, cj 123
Sao Paulo, SP 04707-910
Brazil
Tel (55) 11-5185-9300

Asian Headquarters
Lyondell Asia Pacific, Ltd.
41st Floor – The Lee Gardens
33 Hysan Avenue
Causeway Bay, Hong Kong
Tel (852) 28822-668
Tel (33) 3 44 24 92 05 (tech svc)