

Hexamoll® DINCH®

Hexamoll® DINCH®

**The trusted non-phthalate
plasticizer**



 **BASF**
We create chemistry

WHAT ARE PLASTICIZERS?

Plasticizers are used to soften rigid PVC (polyvinylchloride) and to turn it from being hard and brittle to soft and flexible.

One size does not fit all! Plasticizers go into a wide area of applications, ranging from electrical underground cables to medical devices. The requirements for plasticizers are as diverse as the possible applications: some products are made to withstand extreme temperatures, some have to be very resistant to physical and environmental stress and others are specially designed for close human contact applications. BASF offers the right plasticizers for these different requirements and is convinced that its plasticizers are safe for their intended use.



Hexamoll® DINCH® – the trusted non-phthalate plasticizer

THIS IS HEXAMOLL® DINCH®

Hexamoll® DINCH® is the non-phthalate plasticizer specially developed for applications with close human contact. Therefore it is the ideal solution when it comes to high safety and quality standards for use in many sensitive goods such as:

SPORT AND LEISURE
PRODUCTS



MEDICAL DEVICES

FLOORING



FOOD CONTACT
APPLICATIONS



WALL COVERING



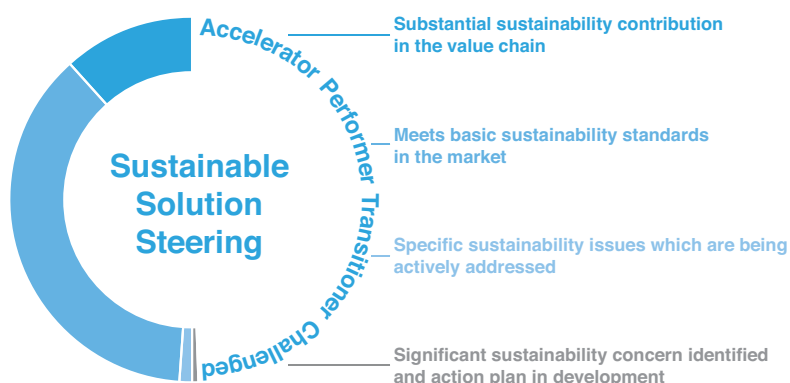
Because of high safety standards and extensive testing, Hexamoll® DINCH® is recommended whenever people are in close contact with PVC products that contain plasticizers.

TOYS

HEXAMOLL® DINCH® ESTABLISHED ON THE MARKET SINCE 2002

BASF has invested more than €7 million in toxicological research for Hexamoll® DINCH® thus far. Thanks to its excellent toxicological profile and the low migration rate, the plasticizer is approved and certified by many authorities and institutions worldwide. In addition, Hexamoll® DINCH® sets high standards with regard to sustainability. In 2014, Hexamoll® DINCH® was evaluated using the Sustainable Solution Steering methodology. It was classified as an “Accelerator” for its contribution to the sustainability of the customers’ industries in enhancing health and safety aspects.

Sustainable Solution Steering is a comprehensive sustainability evaluation and decision-making process for the entire BASF portfolio. With this approach BASF is evaluating the value chain from cradle to grave considering an industry- and region-specific view on their markets. The target is to achieve a balance between the three dimensions of sustainability – economy, environment and society. Over 60,000 products and solutions of BASF were evaluated and assigned to one of the four categories (Accelerator, Performer, Transitioner, Challenged) according to its contribution to sustainability.



The whole approach has been externally validated
by PricewaterhouseCoopers AG Germany (PwC)

Thanks to its unique performance Hexamoll® DINCH® is an established plasticizer on the market. It can be used as a substitute for traditional phthalates in many sensitive applications. Many leading brands in the toy and medical industries as well as several retailers have developed strong trust in BASF’s non-phthalate plasticizer.

HEXAMOLL® DINCH® OFFERS A WELL-BALANCED TECHNICAL PERFORMANCE

Technically, Hexamoll® DINCH® can be processed on your existing machinery, requiring only minor adjustments in formulation and process parameters. Today, this high quality plasticizer is used in many different applications with close human contact because of its excellent toxicological profiles confirmed by extensive tests, which have proven it to be a safe alternative for humans, including infants.

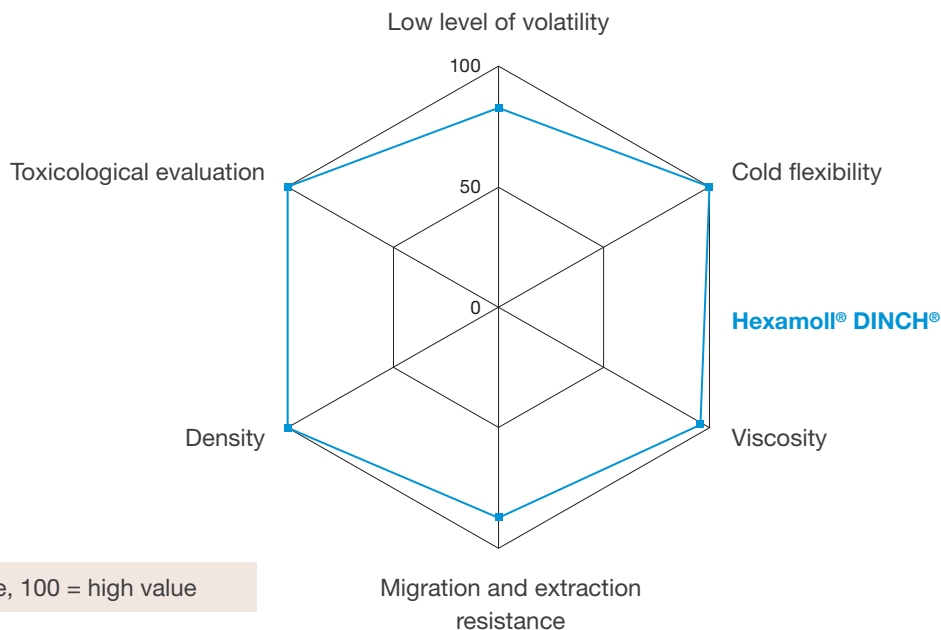
Hexamoll® DINCH® is compatible with PVC over a broad concentration range

Hexamoll® DINCH® offers a well balanced set of properties

- ▶ Excellent toxicological profile
- ▶ Low viscosity
- ▶ Low density
- ▶ Excellent cold flexibility
- ▶ Low volatility
- ▶ Good migration and extraction resistance

Hexamoll® DINCH® can be used in PVC production processes such as

- ▶ Extrusion
- ▶ Calendering
- ▶ Injection molding
- ▶ Rotation molding
- ▶ Spread coating





We innovate to make our customers more successful. Our team acts globally and we are ready to support you in any technical questions you may have. The technical centers in Asia, Europe and North America consist of a highly experienced group of chemists and engineers who help customers to take advantage of the many benefits of our non-phthalate plasticizer. We look at your individual needs and develop the appropriate solution together with you.

HEXAMOLL® DINCH® PROVIDES SUPPLY SECURITY

Product availability and security of supply are our top priorities. BASF is your trustworthy expert supplier for a broad range of plasticizers.

We have established a second level of pre-loading inspection at our filling facilities and improved several other processes in order to guarantee the high quality of our plasticizers. In addition, we have large storage capacities to ensure that we can react flexibly and quickly to short-term changes in customer demand. Our global availability and strict quality control gives you peace of mind when it comes to planning and reliable supply.



HEXAMOLL® DINCH®: APPROVED AND CERTIFIED

Hexamoll® DINCH® is approved for specific applications by manufacturers and competent authorities:

Medical applications

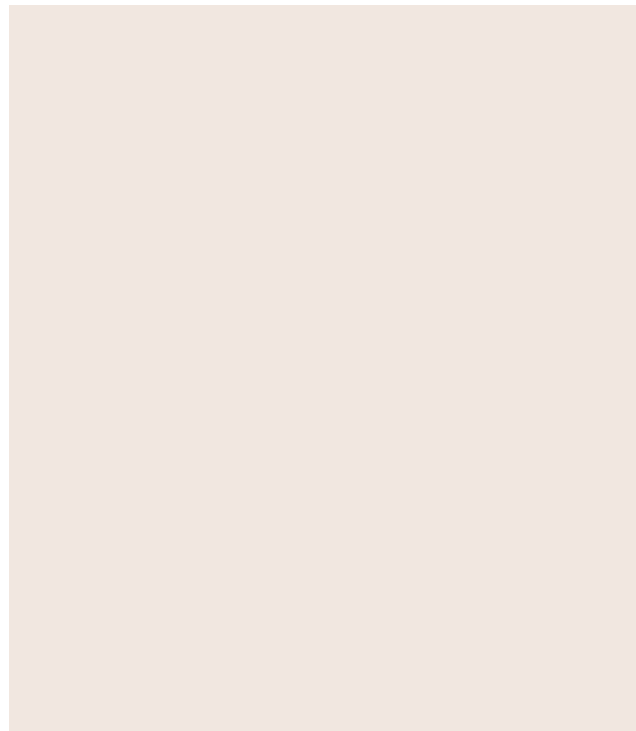
- ▶ Medical Device Directive 93/42/EEC (as amended by Directive 2007/47/EC)
- ▶ DIN EN ISO 10993
- ▶ FDA Medical Device Master File (Nos. 1484 and 16323)
- ▶ United States Pharmacopeia (USP), Monograph 88, Class VI
- ▶ China Food and Drug Administration (CFDA)
- ▶ Korean FDA (KFDA)
- ▶ Japan Ministry of Health, Labor and Welfare (MHLW)

Food contact applications

- ▶ European Commission Regulation (EU) No 10/2011
- ▶ Verordnung des EDI (Switzerland) über Bedarfsgegenstände (817.023.21)
- ▶ Chinese GB Standard 9685-2008
- ▶ Japan Hygienic PVC Association (JHPA)
- ▶ Korean Food and Drug Administration (KFDA)
- ▶ Australian Department of Health (NICNAS)
- ▶ US National Sanitation Foundation (NSF) Standard 61 for drinking water

Toys

- ▶ EU Regulation (EC) No 1907/2006 (REACH), Annex XVII, 51/52 (not listed)
- ▶ EU Toy Safety Directive 2009/48/EC
- ▶ European Toys Standards EN 71-3, EN 71-5 and EN 71-9
- ▶ Complies with US-CPSC toy safety specification ASTM F963





EXTENSIVE TOXICOLOGICAL TESTING

Hexamoll® DINCH® has a non-aromatic structure and is a substitute for traditional phthalate plasticizers. In order to support its safe use in a wide range of applications with close human contact, BASF has conducted numerous tests to demonstrate that Hexamoll® DINCH® is free from hazards like:

Hexamoll® DINCH® has been reviewed by authoritative government agencies and independent third parties. This safe plasticizer has been globally available since 2002 and is successfully used in sensitive applications such as toys, medical devices, food packaging, sports equipment, wall covering and flooring.

▶ Environmental hazards

▶ Peroxisome proliferation

▶ Reproductive hazards

▶ Testicular toxicity

▶ Impairment of fertility

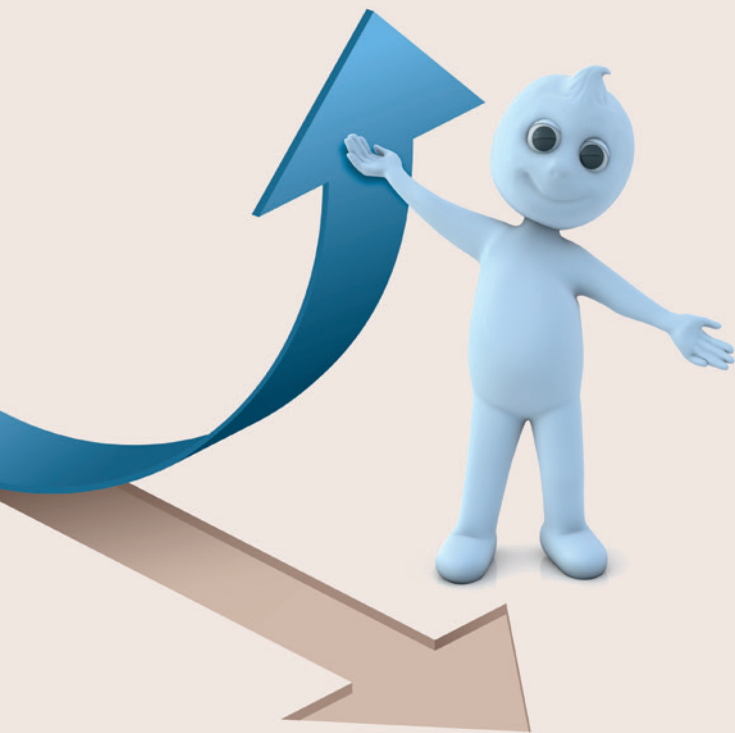
▶ Developmental toxicity

▶ Teratogenicity

▶ Endocrine disruption

▶ Accumulation within the body

▶ Carcinogenicity



MILESTONES

- 2014** ▶ Start-up of second plant and capacity expansion to 200,000 metric tons per year
- 2013** ▶ Winner of “SolVin Award Special Prize”
- 2007** ▶ Expansion to 100,000 metric tons production capacity annually
- 2006** ▶ Winner of ICIS Innovation Award
- 2002** ▶ Start-up of plant producing 25,000 metric tons per year
- 1998** ▶ Research project “sustainable plasticizers”

Hexamoll® DINCH® capacity is expanding to meet the requirements of our customers.



The excellent product performance makes Hexamoll® DINCH® the ideal solution for many articles made from soft PVC. The plasticizer with a good safety profile is suitable for applications such as medical devices, toys and childcare articles, food packaging, indoor applications such as wall covering, and sport and leisure products. Additionally, Hexamoll® DINCH® has proven its suitability in textile applications such as fabric coating and artificial leather.

Examples of medical applications

- ▶ Tubing for enteral feeding and hemodialysis
 - ▶ Respiratory tubing
 - ▶ Catheters
 - ▶ Gloves
 - ▶ Breathing masks
 - ▶ Blood bags
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Examples of toys and childcare articles

- ▶ Dolls
 - ▶ Inflatables, e.g. balls
 - ▶ Figurines
 - ▶ Modeling clay
 - ▶ Swimming aids
 - ▶ Baby buggy covers
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Examples of food contact applications

- ▶ Cling film
 - ▶ Tubing
 - ▶ Cover seals
 - ▶ Cap closures
 - ▶ Crown caps
 - ▶ Artificial wine corks
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Examples of sport and leisure products

- ▶ Gymnastic balls
 - ▶ Exercise mats
 - ▶ Seat cushions
 - ▶ Massage balls and rolls
 - ▶ Shoes
 - ▶ Balls
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Examples of indoor applications

- ▶ Flooring
 - ▶ Wall covering
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Europe

BASF SE

Regional Business Unit
Industrial Petrochemicals Europe
Carl-Bosch-Str. 38
67056 Ludwigshafen, Germany
Phone: +49 621 6059447

North America

BASF Corporation

Regional Business Unit
Petrochemicals North America
11750 Katy
Houston, Texas 77079, USA
Phone: +1 800 533 8966

Asia

BASF (China) Company Ltd.

Petrochemicals Asia Pacific
333 Jiangxinsha Road
200137 Shanghai, China
Phone: +86 21 20391293

For further information:

www.plasticizers.basf.com