

Dissolvine®

cleaning with care

AkzoNobel 

We provide a full range of strong readily biodegradable chelates. Selecting the right one is not easy, we can help you make the right choice!

 **Dissolvine®**
master the elements

 **Dissolvine® GL**
The greener chelate

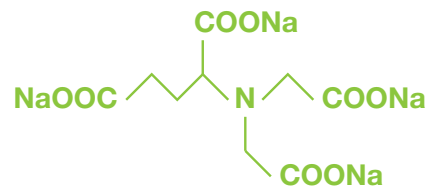
Dissolvine® GL

a greener chelate

Dissolvine® GL is an outcome of our continuing effort to develop new and improved products. Produced from monosodium L-glutamic acid (MSG) which is a biobased naturally occurring amino acid, GLDA is readily biodegradable and offers a high solubility over a wide pH range. It does not sensitize human skin, provides enhanced biocidal boosting power and improved biodegradability properties. Compared to phosphates, GLDA is a far more effective chelating agent and does not contribute to eutrophication.

Dissolvine® GL is glutamic acid diacetic acid, tetra sodium salt (GLDA-Na4). GLDA has four carboxylic acid groups and combined with a centralized nitrogen atom these carboxylate groups provide strong multiple bonds with diand trivalent metals ions. The chemical structure of GLDA highlighting the natural amino acid structure of MSG:

Figure 1
Chemical formula



Dissolvine® GL is a shining example of a sustainable, innovative material that can add value to your product. It offers added value from an economic and ecological perspective and should therefore be considered a cost effective, safe and greener chelating product.

Dissolvine® GL is based on the food-approved natural amino acid salt, monosodium L-glutamate (MSG). Manufacture with this biobased raw material allows for more than half of the carbons in GLDA to be biobased. We believe that this natural amino acid structure in the GLDA molecule allows it to be readily recognized as food by bacteria and thus for GLDA to be readily biodegradable. Dissolvine® GL is fully REACH registered, has excellent low toxicity and low ecotox profiles and does not require dangerous labeling. Significantly, Dissolvine® GL-47-S meets the requirement as a Safer Chemical Ingredient by the U.S. EPA. It is CleanGredients listed and approved for direct release. Consumer and industrial products formulated with Dissolvine® GL-47-S may qualify for displaying the Safer Choice logo on their product's packaging. Dissolvine® GL is a strong chelate for hard water metal ions – like Ca²⁺ – and cleaning formulations containing it benefit from enhanced water softening, cleaning and stability.



A wide range of applications

For cleaning the sub-application areas are:

Household cleaning

- Automatic dishwash
- Laundry detergents
- Surface cleaning

Industrial and institutional cleaning

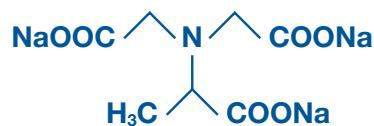
- Mechanical dishwashing
- Cleaning in place
- Transport cleaning
- Hard surface cleaning
- Laundry detergents
- Biocidal detergents
- Metal cleaning

Dissolvine[®] M-40

an essential biodegradable ingredient

MGDA is a fast-working, strong builder with excellent ecological properties, being readily biodegradable and not labeled as dangerous. This makes MGDA an ideal replacement for ingredients under regulatory pressure, such as phosphates (which is banned in various regions due to water eutrophication) in automatic dish washing (ADW) and laundry. It is a drop-in replacement for NTA in industrial and institutional cleaners. In cleaning applications, Dissolvine[®] M-40, will outperform widely used builders like phosphates, citrates, gluconates and zeolites due to its stronger bonds with hard water ions. Dissolvine[®] M-40 is a 40 weight percent solution of Methylglycine N,N-diacetic acid trisodium salt (MGDA) in water (Figure 2). The IUPAC name for MGDA is 2-Aminopropionic acid, N,N-dicarboxymethyl-, trisodium salt. MGDA is also known as Alanine N,N-bis(carboxymethyl) trisodium salt.

Figure 2
Chemical formula



The Dissolvine[®] chelate product portfolio is ready for tomorrow's requirements by covering a full range of applications.

MGDA has three carboxylic groups and, together with the central nitrogen atom, these carboxylic groups provide strong multiple bonds with di- and trivalent metal ions. The small molecular size enables rapid action at low temperatures and short contact time. Dissolvine[®] M-40 is fully REACH registered. The excellent low toxicity and low eco-toxicological profile allow for non-dangerous labelling. MGDA-Na3 is listed on EPA's Safer Chemical Ingredients List in the United States.

Dissolvine[®] M-40 is a strong chelate for hard water and transition metal ions. Using MGDA as an ingredient in cleaning formulations improves the descaling and cleaning capabilities. This includes whiteness and color care benefits in laundry and stain removal abilities in automatic dish washing (ADW). Since MGDA is also a strong chelating agent for heavy metal ions, such as Fe and Cu, it enhances product stability and prevents negative effects of transition metals.



AkzoNobel is committed to a sustainable future

AkzoNobel creates everyday essentials to make people's lives more livable and inspiring. As a leading global paints and coatings company and a major producer of specialty chemicals, we supply essential ingredients, essential protection and essential color to industries and consumers worldwide. Consistently ranked the leader in sustainability, we are dedicated to energizing cities and communities while creating a protected, colorful world where life is improved by what we do.

We're committed to making our product and operations more sustainable. As well as driving our own success, putting sustainability at the heart of everything we do means

that our customers and employees – not to mention the planet – will also benefit. If we're to take advantage of sustainable growth opportunities we have to accelerate the pace of our commitment. Which is why we've adopted an approach called Planet Possible.

Our newly developed chelates shows our commitment to Planet Possible. Due to its readily biodegradable properties it is marked as an Eco-Premium Solution and it provides a key environmental aspect as replacement for traditional and more pollutant ingredients, such as phosphates. Chelates are an everyday essential ingredient with well-recognized benefits in a wide range of applications; mainly used in Household as well as Industrial

and Institutional cleaning applications. Strengthening our biodegradable chelate portfolio also demonstrates our strong commitment to AkzoNobel's Human Cities initiative where we contribute in protecting and improving our urban environments through developing everyday essentials.

Dissolvine® is a registered trademark in many countries.



www.akzonobel.com

AkzoNobel creates everyday essentials to make people's lives more liveable and inspiring. As a leading global paints and coatings company and a major producer of specialty chemicals, we supply essential ingredients, essential protection and essential color to industries and consumers worldwide. Backed by a pioneering heritage, our innovative products and sustainable technologies are designed to meet the growing demands of our fast-changing planet, while making life easier. Headquartered in Amsterdam, the Netherlands, we have approximately 45,000 people in around 80 countries, while our portfolio includes well-known brands such as Dulux, Sikkens, International, Interpon and Eka. Consistently ranked as a leader in sustainability, we are dedicated to energizing cities and communities while creating a protected, colorful world where life is improved by what we do.

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Further information

For more detailed product information please refer to the separate product leaflets. For samples, technical service and other information, please contact your nearest AkzoNobel office or agent, or visit our website at www.dissolvine.com

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