



**ADDITIVES &
COLORS FOR THE
PLASTICS INDUSTRY**

**PACKAGING
SOLUTIONS**



ABOUT TOSAF

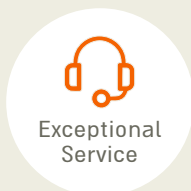
For over three decades, Tosaf has been developing and manufacturing high quality additives, compounds and color masterbatches for the plastics industry with the aim of providing for our customers' every need.

We have continuously grown and developed our offering, production capacity, and global reach, becoming a truly close to the market,

GLOBAL ORGANIZATION

Servicing customers in over 50 countries in Europe, North America, South America, Asia and the Middle East, Tosaf has over 1000 employees spread throughout our production sites, warehouses, sales and distribution offices around the world.

Tosaf CEO Amos Megides established the company in Israel in 1986, and still stands at its head, leading and inspiring his team to always uphold the following three pillars:



Tosaf's major shareholders include:
Megides Holdings Ltd. & the Ravago Group

VAST EXPERIENCE IN PACKAGING

Packaging is the largest market for plastic worldwide, used in applications that range from food to medical, cosmetics to industrial. While its primary functions may include protecting goods from damage in transit, extending shelf life and improving food quality and safety, packaging also plays a key role in branding and customer engagement.

An attractive, eye-catching design can create a unique differentiation that makes your goods stand out from the competition, influencing buying behavior and increasing sales. Therefore colors, and in recent years also color effects like pearlescent and metallic, are becoming increasingly important across the packaging market segment.

Virgin polymers may answer many technical requirements, but they require many additives to give them additional properties

that are critical for successful packaging, as well as specific additives that improve process conditions and productivity without compromising their quality.

With more than 30 years' experiences and superior global R&D capabilities, we can answer these needs with a wide offering of both standard products and tailor-made solutions.

All our products for packaging meet regulations relating to packaging and packaging waste, such as 94/62/EC and other associated standards. We can also supply products conforming to global food contact standards such as European Regulation(EC) Number 1935/2004, Directive Number 10/2011 and all local community state legislation regarding plastics materials and articles in contact with food as well as the US Food & Drug Administration (FDA) legislation.

OUR LEADING PRODUCTS

AF (ANTI-FOG)

Packaging for refrigerated food products with high humidity ratios is prone to contain condensation. This limits product visibility and may put off customers who won't buy what they can't see. With many years of experience in developing and producing high-quality anti-fog additives, we can help you design and produce packaging with superior anti-fog properties, for any application.

Our anti-fog masterbatches contain innovative additives that migrate to the surface of the film, reducing the surface tension with the water so that, instead of drops, the water forms a thin, uniform layer that does not obscure visibility. As a result, you get excellent optical properties and better product appearance, along with first-rate processing to minimize die buildup and maximize productivity.

AF BARRIER

Awareness of the importance of AF function in refrigerated food has increased in recent years. At the same time, the films have become more complex and sophisticated.

Usually an additional process is required, such as printing or lamination. Due to the fact that AF is a migratory additive, there is a need to find a solution in which the migration will not negatively affect the converting processes on the one hand, and AF function will be perfect on the other. With our knowhow in the field of materials and market needs, we have developed a unique additive that allows film manufacturers to run converting processes without any fear of delamination or weak color grip, while maintaining high-quality, lasting AF performance.

SLIP

Slip additives make film production easier, by preventing layers of film sticking together, or sliding over each other. However, they must be used with caution. Too much slip agent can cause blooming - reducing transparency, negatively affecting the printing and slipping properties of the film and increasing the risk of low bonding strength on laminated structures. You also need to ensure that the thermal stability of the slip additives used is suitable for the relevant film process conditions. With over 20 years of experience, we can help you avoid these issues.

OUR LEADING PRODUCTS

ANTI-BLOCK

Polyolefin film tends to stick together when an attempt is made to separate it into two film layers. This so-called 'blocking' is determined by the composition and rolling tension of the film. The quantity and type of anti-blocking agent incorporated into the film to solve this issue can affect transparency, or it can adsorb migrating agents, such as anti-static, slip, or anti-fog additives, decreasing their efficiency. Using our experience, knowhow and synthetic silica (rather than the more commonly used crystalline natural), we can help you avoid these problems.

SLIP-ANTI-BLOCK

We offer you the advantage of both slip and anti-block additives in one masterbatch, so you can avoid significant adsorption of the migrating slip additives by the anti-block agents. Our range includes several grades suitable for different types of packaging processes, so you get an innovative, agile additive that meets several needs at once.

ANTI-STATIC

Polyolefin materials are not conductive, so they accumulate static electricity which can cause films to stick to each other or other surfaces, pick up of dust, and even sudden discharge as sparks, causing fires. Our anti-static masterbatches contain migrating molecules which migrate to the surface and attract a thin layer of water molecules from the air, which is sufficiently conductive to dissipate the charge. Our wide range of masterbatches meets different needs, making them suitable for use in a variety of relative humidity levels, from dry to high moisture.

PROCESSING AID

The appearance of packaging can have a large impact on whether or not a customer chooses to buy a product. But at high outputs and when using polymers with specialized properties, it can be difficult to achieve stable, defect-free film production. Our high-quality processing aid solves this problem, enabling you to improve the quality of your film, while reducing energy consumption during production. Our extensive range of Polymer Process Aid (PPA) masterbatches have been specifically designed to enhance the process ability

of plastics, such as PE film, pipes and tubes, to improve productivity and quality, and reduce costs.

UV

Polyolefins are sensitive to UV light, which can cause significant damage to plastics. Each polymer has a different minimal absorption peak in the UV range, and its expected life will depend on the irradiation level to which it is exposed, its thickness and the additives it contains. We have developed an innovative range of additives that help to protect products made from polyolefin from light and heat degradation. Sharing with you our knowhow and years of experience, we will advise on which additives to use, how to use them and in what quantities, to optimize them for both your production process and the final application by the end user.

COLOR

Packaging may be made from a wide range of polymers, so accurately matching colors requires wide-ranging expertise of pigments, polymers and additives. Tosaf is your one-stop-shop for color masterbatches, taking a coordinated approach to deliver creative solutions that meet all your color, functional and compliance needs.

We offer a fast service that few others can match. Indeed, we are one of the only multinational masterbatch and compound companies able to offer dedicated, local color service support from our color laboratories and innovation facilities around the world.

WHITE MASTERBATCH

The vast majority of our white masterbatches are used in the packaging sector, in applications such as food, cosmetics, detergent and industrial supplies. A high-quality, competitive solution, our white masterbatches have been designed to withstand extreme processing conditions, including extrusion, injection and blow molding, preventing the die buildup, heavy smoke and strong odor that can be caused by high processing temperatures. They also provide high dispersion quality and tinting strength, while meeting the requirements of specific applications, such as organoleptic properties in milk packaging and non-migration additives for applications like lamination and metallization.

INDUSTRY APPLICATIONS



REFRIGIRATED FOOD

One of the greatest challenges in food packaging today is the preservation of refrigerated products. Now more than ever, customers want the convenience of having an assortment of healthy, fiber-rich, garden-fresh produce instantly available in their refrigerator to feed their families.

At Tosaf, we understand that different food types have different requirements. Fresh produce, for example, needs to look fresh, with no signs of browning, limpness or deterioration in quality. Dairy products require special environmental conditions and packaging that keeps them safe for consumption.

Working with you, we apply our expert knowledge, innovative ideas and technological knowhow to developing unique additives for different packaging applications, so that you can impress your customers and increase their sales.



READY MEALS

As the popularity of, and market competition for, ready meals continues to grow, the convenience of the packaging plays an important role in ensuring that a product is a success. Thanks to our innovative additives, we can successfully handle the challenges involved in the processing of raw materials, converting processes (lamination, printing) and packaging processes which require high performance (low sealing capabilities and high working speed). Our solutions ensure that your packaging not only protects the product, but also preserves its aroma and flavor and makes it easier to prepare, for a ready meal that consumers will love.



SHELF-STABLE FOOD

Food products on shop shelves need to maintain their quality for months, or even years. The innovative additives in our packaging solutions for shelf-stable foods provide reliable protection from moisture, oxygen and UV light, all of which can cause deterioration or spoilage, for a wide range of applications. The result is a long shelf life throughout which the flavors, aromas and appearance of the food are preserved, ensuring that the product remains attractive to consumers.

Our familiarity with market needs and evolving trends enables us to offer creative solutions in the design field, such as a matte finish, and creative packaging solutions, such as permanent slip.



PET FOOD

The pet food market has become an area of innovation in terms of packaging, moving in recent years from cans and paper towards differentiated polymers. We have developed several innovative solutions that meet the unique and evolving needs of this market.

One of the major segments in the pet food industry is dry pet food. Keeping it dry and in optimal condition takes more than just the physical barrier of the packaging itself. Our innovative moisture-absorbing masterbatches provide fast and long-lasting protection, ensuring that moisture occurring inside the packaging is absorbed by the packaging instead of the food.

Another challenge in this type of packaging is how to seal at low temperatures and at high speed. Having identified this need, we have developed additives that are resistant to these conditions and contribute to the efficiency of the packaging process.



CAPS & CLOSURES

Caps and closures have become complex, engineered products. They need to allow multi-usage, be resealable and securely contain the contents of the bottle, tub or tube. Easy to process and exceptionally recyclable, thermoplastic materials are ideal for use in the production of caps and closures. We have developed several unique and innovative solutions that modify the coefficient of friction - the ratio between the amount of force needed to remove the cap, and the pressure needed for the closure of the container - ensuring that the cap or closure is easy to remove and replace, while providing an efficient seal that protects the contents from spillage or leakage.

Our permanent slip additive can benefit the packaging process, without creating the odor issues characteristic of other products on the market. Color too plays a critical role in caps and closures. Products and brands are now identified with specific colors that must follow throughout the brand, regardless which polymer matrix is being used. Color formulations also need to take into consideration strict regulatory specifications in order to guarantee no migration or alteration of the content. To this end, we develop specific solutions to meet all technical requirements, without compromising the color aspect. We are also able to tailor our masterbatches for caps and closures to avoid any organoleptic influence on the packed product.



MILK BAGS

Despite every effort that is made to ensure that milk is sterile before it is packaged, it is still vulnerable to microbial deterioration. The role of packaging in this application is to prevent this process, while also protecting the milk from external environmental factors.

As the use of milk packaging made from polymers, rather than glass or cardboard, increases, our solutions, not only improve packaging production processes, but also provide an excellent opaque uniformity, and deliver the necessary protection to the packaged goods.



PROTECTIVE FILMS

Industrial packaging, such as shrink wrap, stretch film, skin film and shrink hood, plays an important role in protecting products during transportation from the manufacturer to the consumer. These packaging materials are primarily composed of polyolefin and come in various configurations, sealed or bundled, for different types of products.

Our range of game-changing additives and specific high-dispersed colors allow you to produce industrial packaging that delivers a cost-effective, reduced-volume solution to your manufacturer customers, enabling them to extend the lifecycle of their products and deliver crates that can withstand the rigors of the supply chain.



PERSONAL CARE & COSMETICS

Packaging used in personal care and cosmetics requires additives that protect the surface of the product, but colors play an even more dominant role.

In recent years, there has been an increase in demand for special effect colors, such as pearlescent and metallic, marble and wood effect, which are used by producers to differentiate their products from those of their competitors. These colors and effects are dictated by the brand owner and their product designers, without consideration of the specific pigment performances. This is our role and challenges our color technicians on a daily basis as they work to meet market and customer requirements. Color preferences are also dictated by fashion, and we are able to anticipate future trends to support our clients with proper advice and recommendations.

In addition to the wide range of standard colors always available in stock, we produce more than ten thousand tailor-made solutions each year.

OUR GLOBAL REACH



PRODUCTION PLANTS

SALES OFFICES