



# Tribo-XT

## PRODUCT DESCRIPTION

**Tribo-XT** is a water-based graphene suspension, which allow you to create a highly lubricant dry coating. With Tribo-XT is possible to create a very thin flexible coating, up to 10 nm, on a wide range of substrate: metals, polymer, ceramic, glass, wood, textile, etc. the coating will reduce dramatically the friction coefficient.

The suspended graphene is produced by chemical exfoliation of graphite using a proprietary exfoliating agent, below 1% wt.

No oxidation processes are involved in the production of **Tribo-XT**, giving to this product the excellent mechanical and thermal properties of graphene.

Is possible to apply **Tribo-XT** with the common industrial technologies (spray, roll to roll, brush) on wide range of substrate: polymer, paper, metals, glass, etc..

## APPLICATION

Lubricant for metal, polymers, ceramics. Lubricant for moulding, stamping and metal working process. Release agent, surface protection coating. With **Tribo-XT** is possible to create a thin layer that help to protect the mould from slag of third party lubricant. The graphene coating will protect from graveling effect of various particle in a very harsh condition. **Tribo-XT** is also suitable to protect your substrate from high beam ion.

## TECHNICAL SPECIFICATION

- Appearance: liquid
- Colour: black
- Odour: typical
- Density, at 25°C: 980 kg/m<sup>3</sup> [ASTM D-1298]
- Viscosity: 1-2 cSt at 25°C
- pH: 7±0,5
- Graphene concentration [% p/p]: 1%

## APPLICATION INSTRUCTIONS

### *Deposition*

The **Tribo-XT** suspension should be used as water dispersion; it can be applied with all technique suitable for extremely low viscosity solution. Dip coating, spray coating, brush, roll to roll technique are suitable as long as they do not exceed the amount of material deposited, we do suggest to remain below 12 micron of wet suspension deposited per pass.

### *Drying*

Drying step can be performed with hot air, IR, and any other technique suitable to remove the water. We do suggest fast drying in order to improve the quality of the deposition.

### *Fixation*

A fixation is suggested in most of the substrate, it can be done with most of the commercial solvent: acetone, ethanol, methanol, isopropyl alcohol, ethyl acetate, etc. Please choose the solvent based on the substrate compatibility. The solvent should be removed from the surface before its evaporation; this will guarantee the removal of suspending agent used to maintain the graphene in dispersion. In case of lines, stripes or area without graphene use higher purity solvent or improve the solvent removal process after washing step.

### *Cleaning*

A cleaning step can be optionally done in order to remove the excess of suspending agent from the graphene surface. Cleaning can be done with paper, cotton, fabrics, napkins, etc.

Please refer to our YouTube channel for usage example: <https://www.youtube.com/c/Graphenext>

## STORAGE

Store at room temperature preferably not above 25°C to avoid graphene separation. In case of graphene separation, proceed with 1h stirring or sonication in order to form a stable suspension.

Do not add any chemicals to the suspension and use clean container to handle the solution otherwise an irreversible separation will occur.

Shake vigorously for at least 10 min before using.

## PACKAGING

Plastic container of 100 ml or 1 Lt.





## SAFETY

Please carefully read the MSDS before use **Tribo-XT**. Graphene-XT ink product it is not dangerous, corrosive or toxic, it is anyway a suspension containing a relatively new nanomaterials and should be used with a good industrial practice for nanomaterials handling.

We strongly recommend to avoid breathing aerosol generated from the **Tribo-XT** solution and to prevent powder formation by drying **Tribo-XT**. It is highly recommended to follow the EU indication for the risks from the manufacturing and use of nanomaterials: <https://ec.europa.eu/environment/chemicals/nanotech/>

## IMPORTANT NOTE

The data contained in this document are based on our current knowledge and experience. The reported data are typical values obtained in the laboratory and are not to be considered as a guarantee, in consideration of the numerous factors that can affect the process and application of our product. These data do not relieve users from carrying out their own preventive tests; Graphene-XT cannot be responsible for the results obtained with our products and for any damage or accident that may arise from their use. The quality of the product is given exclusively by the declarations contained in the product specifications.