



# GasSaver-Check

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# Electrothermal drying systems for printing systems and coating processes

**Save up to 50 % gas immediately with the adphos Gas-Saver-Booster**

**Gas prices have not only increased extremely - now even the gas supply is in doubt.**

In the textile industry, there are a large number of drying processes in the various production steps. In most applications, gas-operated hot-air dryers are used. Despite the high consumption values for these gas dryers, alternative drying systems have not found their way into the textile industry in the past, or only to a limited extent, due to the low gas price and the high availability of natural gas. Currently, in view of the threat of reduced and limited gas supply, production is completely endangered.

With the

## **adphos Gas-Saver-Booster,**

developed in-house and based on our aLITE® drying technology, adphos offers a highly efficient electrothermal drying system that works completely without gas and without CO<sub>2</sub> emissions:

**adphos Gas-Saver-Booster** is a quickly realizable solution

- for a noticeable reduction in gas consumption and
- to ensure emergency production without gas

Due to its compact design, the aLITE® drying system is installed right in front of the existing gas-operated hot air dryer as a so-called booster. In this way, partial drying is realized, which simultaneously leads to a reduction in gas consumption. Depending on the drying process, the available installation space and the selected degree of drying, gas savings of up to 50 % can be achieved.

adphos offers a short-term, free analysis and implementation assessment. After a positive assessment and commissioning, installation can take place in just 6 months.



## Technical Background

aNIR® and aLITE® are proprietary, extensively patented platform technologies of the adphos Group based in Bruckmühl, Germany, which have been successfully used for heating, drying, sintering and melting in a wide range of industrial sectors for more than 25 years.

One area of the aNIR® platform technology is the aLITE® technology, which was designed and specially developed for thermal surface processes. The aLITE® technology enables the drying of textiles within seconds and the fixing of coatings, printing and dyeing processes on textile and nonwoven materials.

The innovative aNIR®/aLITE® technologies have meanwhile also proven themselves several times in different applications in the textile sector.

As an adhoc solution for the textile industry that can be implemented at short notice, adphos offers the electrothermal booster solution for pre-drying:

- the existing production and drying process remains unchanged
- the adphos booster is placed in front of the production dryer
- the gas consumption is reduced by up to 50 % due to the reduced moisture content of the textile in the inlet to the convection dryer
- the adphos booster is powered by electricity.
  - greendeal-capable according to EU taxonomy
  - CO<sub>2</sub> emission-free operation without the need for certificates

Fill out the "Gas-Saver"-Questionnaire below and request further information or arrange an individual consultation with us in Bruckmühl.

Further information's are available at [GasSaverCheck@adphos.de](mailto:GasSaverCheck@adphos.de).

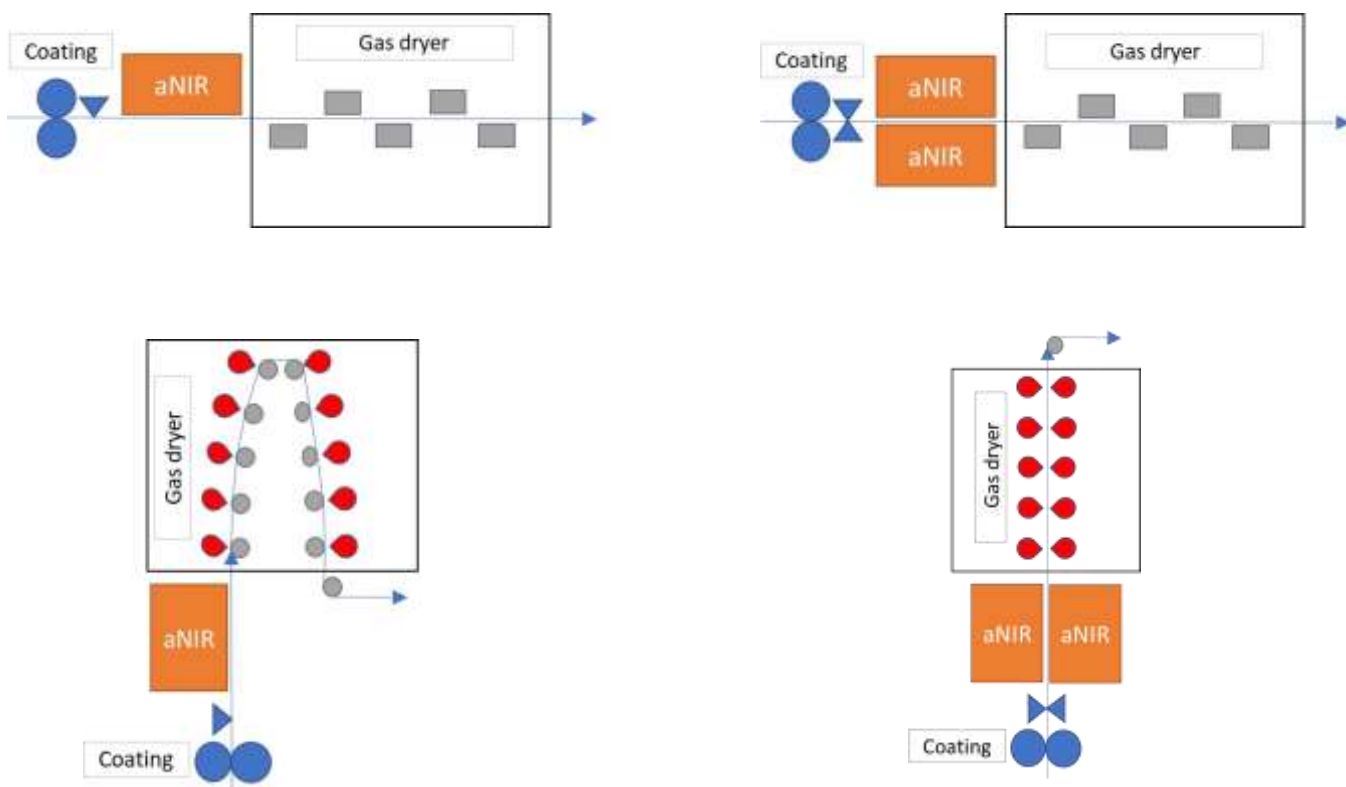


# Typical aLITE® - Booster Performance

Exemplary view for the pre-drying of water or solvents with a booster length of 1 m.

Feed rate	H <sub>2</sub> O-Content		Solvent Content (e.g. MEK, MIBK, etc.)	
	<i>one sided</i>	<i>Double sided</i>	<i>One sided</i>	<i>Double sided</i>
15 m/min	60 g/m <sup>2</sup>	120 g/m <sup>2</sup>	> 180 g/m <sup>2</sup>	> 360 g/m <sup>2</sup>
30 m/min	30 g/m <sup>2</sup>	60 g/m <sup>2</sup>	> 90 g/m <sup>2</sup>	> 180 g/m <sup>2</sup>
60 m/min	15 g/m <sup>2</sup>	30 g/m <sup>2</sup>	> 45 g/m <sup>2</sup>	> 90 g/m <sup>2</sup>
120 m/min	7.5 g/m <sup>2</sup>	15 g/m <sup>2</sup>	> 22.5 g/m <sup>2</sup>	> 45 g/m <sup>2</sup>

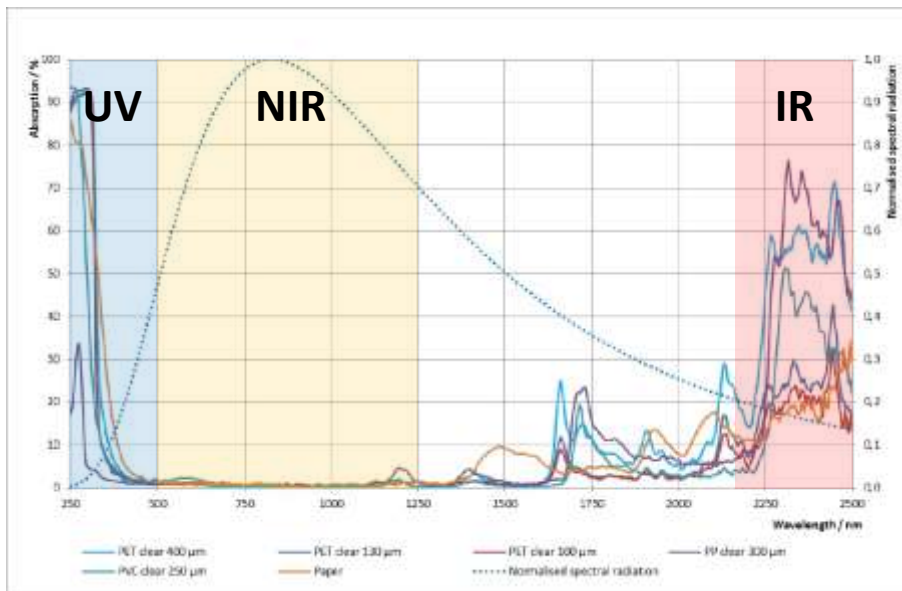
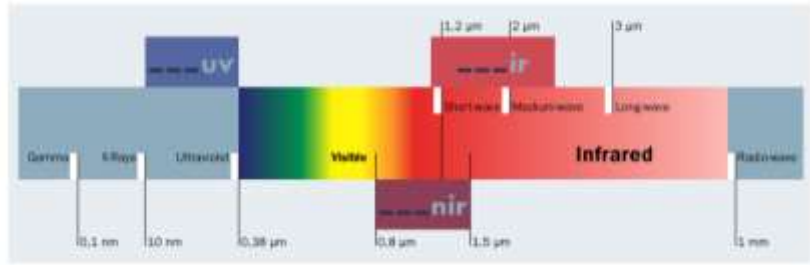
## Possible System Layouts



# aNIR® General Information and Working Principle

## Benefits of aNIR® Drying Solutions

- Greater production speeds possible
- Reduced power consumption possible
- Processing a greater variety of substrates (incl. temperature sensitive substrates)



## Basic Working Principle of the adphosNIR®-Technology

The aNIR®-technology is a company owned development and widely patented photonic processing technology. The aNIR®-technology is characterized by special wavelength spectrum of the energy source, high energy intensity of the energy source and focusing reflectors with a unique geometry.

The energy source is a special tungsten filament in a proprietary gas doped emitter heated to an extremely high temperature (3,000 – 3,500 K) thus emitting a photonic energy spectrum between 250 nm and 3,000 nm with an energy emission peak at 820 nm). The aNIR®-Emitters are available at different energy density levels from 35 W/cm up to 240 W/cm.

The design of special geometric focusing reflectors around the emitter arrangements ensures a highly homogenous energy emission on the top of the irradiated (heated) substrates. Different reflector shapes also allow an energy concentration to a focused area. With these patented reflector designs, either line focusing energy concentration to  $\leq 5$  mm or homogenous energy distribution over large areas (up to several m<sup>2</sup>), with so called area heaters can be achieved.



# Company Profile

aNIR® is one of the fastest growing drying technologies for ink jet printing and coatings applications. adphos pioneered the technology and enhanced its output to provide a very high power density into the ink or coating film leaving the paper and plastic substrate largely unaffected. The high power density found at this particular wavelength drives out the water (or solvent). aNIR® can also be used to sinter or cure very rapidly ensuring that the print or coating is dry within a very small footprint. This ensures that production machinery can include effective and efficient drying without taking excessive amounts of machinery or space.

For the production of printed electronics, several thermal processes are necessary. The high performance and compact design of aNIR®-technology is ideal for the production of printed electronics.

The focus of the adphos group lies in the development, manufacturing and distribution of standard components for thermal processes such as drying and heating. adphos also offers design and engineering of special purpose machines.

No matter the difficulty of the application needs, aNIR®-technology can provide:

- Drying within seconds or even within milliseconds
- Defined, controlled and repeatable processes
- Drying on temperature sensitive materials
- Energy efficiency

adphos will always unveil their newest line of flexible and innovative solutions. Built for a variety of different thermal processes including drying of water-based coatings and solvent-based coatings; as well as sintering and/or thermo-chemical processing of functional coatings.



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# Gas-Saver-Questionnaire

**Company:**

**First Name:**

**Surname:**

**Department/Function:**

**Street:**

**Zip / Location / Country:**

**Phone / Fax:**

**E-Mail:**

**Homepage:**

**Prospective customer/ customer group:**

- Textile user
- Print:
  - Flexo
  - Gravure
  - Screen printing
  - Heatset
- Coating processor
- Others, please explaining:

**Enquirey regarding / or project catchword:**

**Application (please describe):**



# Gas-Saver-Questionnaire

## CLASSIFICATION

### **Substrate material:**

- Paper
- Plastic
- Textile
- Metal
- Others (please explain): \_\_\_\_\_

### **If drying:**

- Water or
- Solvent

### **Further Information:**

- Web/Coil or
- Sheet or
- Single components (which?): \_\_\_\_\_
- Single application or
- Multiple (how many): \_\_\_\_\_

### **Production parameters:**

- Feed m/min: \_\_\_\_\_
- Water/solvent content in g/m<sup>2</sup>: \_\_\_\_\_
- Web width in mm: \_\_\_\_\_
- Permissible Temp. in °C: \_\_\_\_\_
- Available space for installation (please add photo or drawing)
- Application specific criteria: \_\_\_\_\_
- Gas consumption: \_\_\_\_\_
- Gas price: \_\_\_\_\_
- Electricity price: \_\_\_\_\_

### **Remarks:**

\_\_\_\_\_

\_\_\_\_\_

**Thank you for your return:**

E-Mail: [GasSaverCheck@adphos.de](mailto:GasSaverCheck@adphos.de) / Fax: +49 8061 395-110

