



BEKOKAT®

**RELIABLE AND CONTINUOUS
OIL-FREE COMPRESSED AIR
FOR ANY APPLICATION**

BEKOKAT®**PRECISION PROCESS CONTROL****THE FIRST LINE OF DEFENSE AGAINST INVASIVE OIL CARRYOVER**

Conventional compressed air treatment has certain inherent technical and economic limits, especially where air purity is absolutely critical and the application is particularly sensitive.

This calls for a fresh approach and advanced solutions. **BEKO's** catalyst technology sets a new benchmark in compressed air treatment products that overcomes these limitations by offering users a technology that will produce what is in essence oil free air from a single device, regardless of operating conditions.

Intensive research and development work was conducted in order to exploit the theoretical possibilities of catalyst technology, which has resulted in the **BEKOKAT®** – a device that combines superior efficiency with the highest level of reliability.

The **BEKOKAT®** represents a real technological breakthrough never before offered.



As we enter into a new era of consciousness about our environment and our impact on it, the pressure of environmental responsibility for commercial and industrial sites is at an all time high. With new thinking comes new solutions and the disposal of oily, contaminated condensate that once was "acceptable" is now being met with more stringent legislation and harsher penalties, and rightfully so.

Section 309 of the Federal Water Pollution Control Act allows for the issuance of fines not less than \$2,500.00 per day up to \$25,000.00 per day, jail time, or both for first time violators. Such penalties can be assessed against the negligent company and/or the individual person or persons responsible for plant operations and maintenance.

BEKO TECHNOLOGIES has maintained its position as an environmentally conscious and ecologically responsible company since its inception more than 25 years ago. Our company and product portfolio are synonymous with environmental responsibility, educational awareness, and community commitment. Through extensive research and development, and masterful engineering, we are able to continually supply the most reliable, economical, and environmentally responsible products in the industry.

BEKOKAT®**ADVANCED AIR TREATMENT****COMPLETE TRANSFORMATION**

The compressed air of oil-lubricated compressors contain hydrocarbons in the form of lubricants and oil as well as air constituents in the form of gas, vapour and aerosols. The **BEKOKAT®** system completely transforms hydrocarbons by total oxidation to produce carbon dioxide and water.

CONSTANT, EVEN TEMPERATURE

For compressed air treatment using a **BEKOKAT®** unit, a pressure vessel is filled with a specially developed granulate. The entire vessel is heated to an operating temperature of 302 °F. The oil particles in the compressed air stream that flow through the heated vessel are completely transformed inside the pores of the catalyst granulate, the only by-products being water and carbon dioxide.

MAXIMUM CONFIDENCE

After rigorous testing by the world renowned TÜV Nord Group, the **BEKOKAT®** devices have obtained one of the most recognizable certifications in our industry. The installation of one of our devices guarantees your results with fully supported performance documentation. You cannot find this anywhere else in the world.

**+1:****OIL FREE COMPRESSED AIR**

Continuously produced from any compressor type down to 0.003 mg/m³

+2:**INDEPENDENT OF CONDITIONS**

Stable residual oil content throughout the year, in any climate

+3:**ENVIRONMENTALLY FRIENDLY**

Produces oil free condensate of the same quality as the compressed air stream

+4:**PARTIAL LOAD OPERATION**

Maximum process reliability regardless of production fluctuations

+5:**RESPONSIVE CONTROLS**

Ensure machine safety and operational accuracy



BEKOKAT®**CONTINUOUS OIL FREE AIR**Condensate without / with **BEKOKAT®****A constant supply of oil-free compressed air with a barely detectable maximum residual oil content of 0.003 mg/m³**

With this high level of efficiency, the **BEKOKAT®** devices can easily sail past the stringent oil content stipulations of DIN EN8573-1 / ISO 8573 Class 1 - *And beyond.* At the same time, the new functional principle breaks down both technical and economic barriers that are typically associated with conventional compressed air treatment solutions, especially where those applications with extremely high requirements are concerned.

The oil free and dry compressed air can then be used for the given application; the remaining water is simply discharged. Consequently, **BEKOKAT®** systems are not only highly effective, but also very environmentally friendly.

**PHARMACEUTICAL INDUSTRY**

Whether an oil free compressor is currently employed or not, imagine the contamination of a multi-million dollar batch run of pharmaceuticals because of a slowly deteriorating crankcase main seal. The subsequent incineration of that batch is pure loss. The **BEKOKAT®** offers unparalleled production protection.

**CHEMICAL INDUSTRY**

Chemical production is central to the modern world economy. From basic to specialty chemicals, life sciences to consumer products, one minor miscalculation can be disastrous. The use of **BEKOKAT®** in conjunction with proper protocol can only lead to results that are maximally optimized.

**FOOD & BEVERAGE
AND TOBACCO INDUSTRY**

FDA and/or USDA approved facilities must meet some of the most stringent requirements in terms of overall cleanliness and purity in their production methods. The **BEKOKAT®** hydrocarbon removal systems ensure these requirements are met on a daily basis, 24 / 7 / 365.

**MEDICAL INDUSTRY**

There is no application more critical than having another human life in your hands. From the beginning stages of diagnosis to final recovery, medical applications of all kinds require the most sterile, pure air available. **BEKOKAT®** systems not only eliminate oil, but bacteria as well - The perfect solution.

**SURFACE INDUSTRY**

The introduction of hydrocarbons into the air line of any surface coating or spray application can be detrimental to the finish or final product quality. With the addition of a **BEKOKAT®** system and the guaranteed residual oil content downstream that perfect paint job can finally become a reality.

**PACKAGING INDUSTRY**

The quality of air used in the conveyance and packaging of food must be of equal quality and purity as the air used during processing and production. The adherence to strict packaging guidelines and laws is vastly improved by implementing a **BEKOKAT®** device to any line.

BEKOKAT®

A PROVEN SUCCESS

SUCCESSFUL TEST

In April 2007, a **BEKOKAT®** system underwent intensive testing at the facilities of the renowned Midland Medical Services Ltd. in Birmingham, UK. The compressed air was produced using an oil-lubricated compressor. The following values were measured at the outlet, downstream of the **BEKOKAT®**.

Oxygen	21.1% v/v
Carbon dioxide	410 mg/m ³
Carbon monoxide	0.0 mg/m ³
Nitrogen monoxide/dioxide	0.0 mg/m ³
Sulphur dioxide	0.0 mg/m ³
Water	1,080 mg/m ³
Oil	< 0.1 mg/m ³

The existing measurement tools at Midland could not register residual oil content. The **BEKOKAT®** delivers *near* oil-free compressed air (≤ 0.003 mg/m³) continuously at all times.



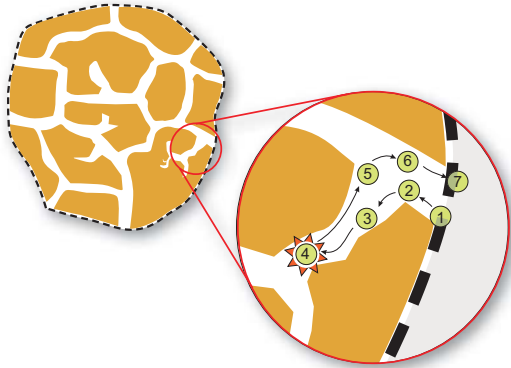
EVEN IN PARTIAL LOAD OPERATION: COMPRESSED AIR OF BREATHING QUALITY

After treatment the clean compressed air is cooled in a heat exchanger down to a temperature of approximately 50 °F to 60 °F above *inlet* and is then available for the desired application.

Likewise, the condensate produced during the cooling of the compressed air is absolutely oil free and can be fed into the sewer system without further treatment. The exceptionally long lifetime of the special **BEKOKAT®** granulate is a great advantage economically: it only needs to be replaced after some 24,000 operating hours.

Thus the treated air is not only of medical breathing air purity, but also 100% environmentally friendly.

BEKOKAT® CATALYST FUNCTION

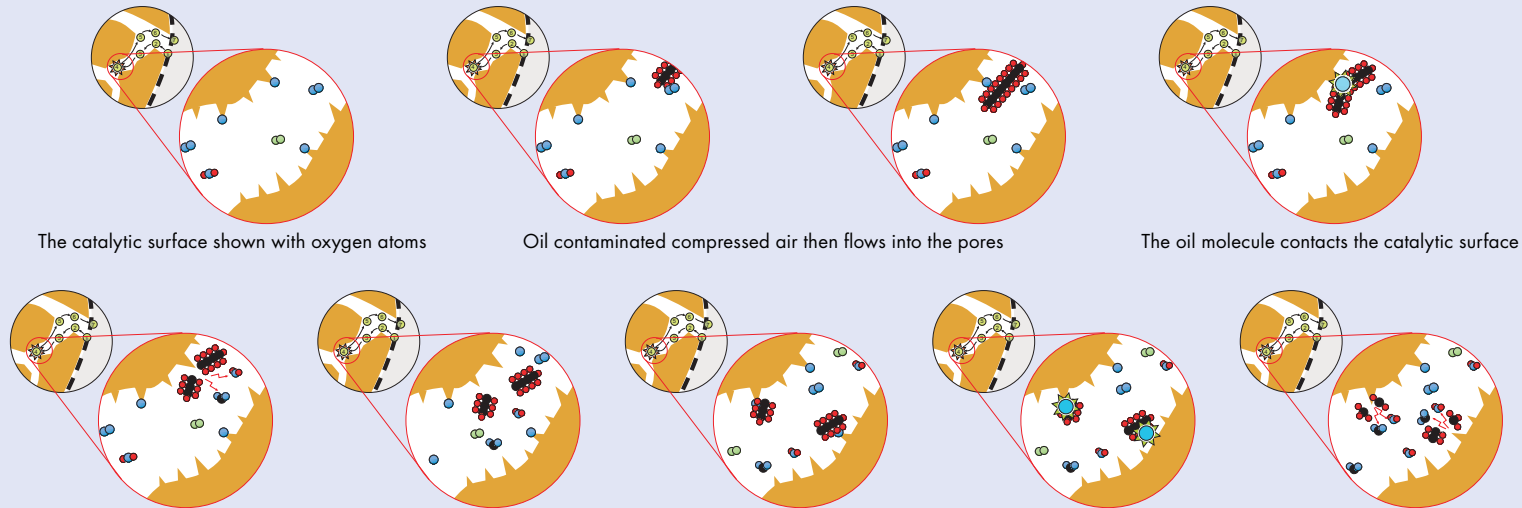


FUNCTION OF THE CATALYTIC CONVERTER

The heterogeneous catalysis of the **BEKOKAT®** has the following reaction stages

- Part 1: Diffusion of the reaction particle on the catalytic surface
- Part 2: Diffusion of the reaction particle within the pores of the catalyst
- Part 3: Adsorption
- Part 4: Surface reaction
- Part 5: De-sorption of the reaction products
- Part 6: Diffusion of the products out of the pores
- Part 7: Diffusion of the products into the homogenous phase

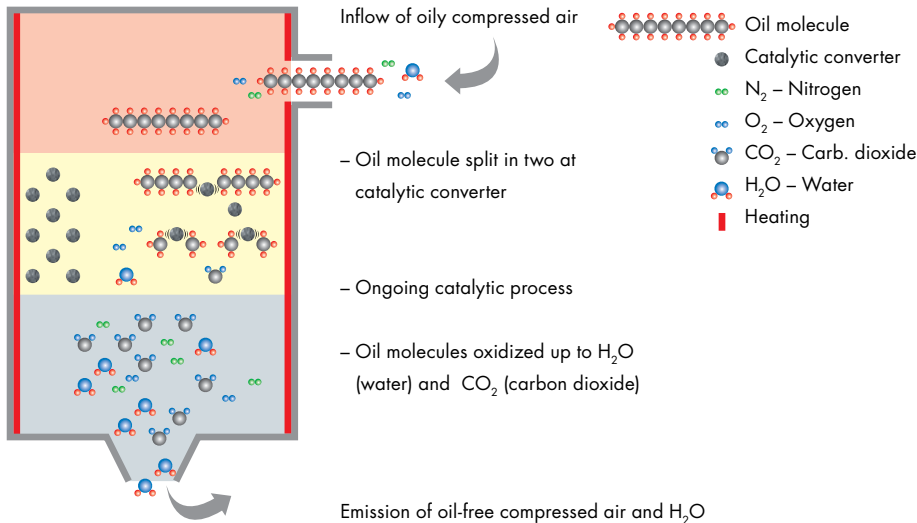
The Proof is in The Details . . .



Thus causing the oil molecules to split into smaller chains. As this chemical reaction takes place, the hydrogen and carbon atoms bond with the oxygen atoms creating CO_2 and H_2O . The final by-products then disconnect from the catalytic surface. This process continues with each subsequently smaller chain of hydrocarbons.

This process will continue within the catalytic material until all of the hydrocarbon molecule chains are broken down, and only carbon dioxide and water molecules remain.

CATALYST FUNCTION



BEKOKAT®

TECHNICAL DETAILS

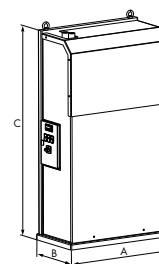
Model	Flow Rate scfm	Connection NPT	Voltage V / Ph / Hz	Max. Pressure psi	Input Power kW	Power Consumption kW	Dimensions (in)			Weight lbs
							A	B	C	
CC 035-NA	35	1"	230 / 1 / 60	232	1.00	0.52	57	33	17	286
CC 070-NA	70	1"	230 / 1 / 60	232	1.64	0.86	57	39	18	440
CC 105-NA	105	1"	230 / 1 / 60	232	2.60	1.33	61	48	21	605
CC 210-NA	210	1 ½"	460 / 3 / 60	175	5.10	2.17	63	52	30	693
CC 425-NA	425	2"	460 / 3 / 60	175	8.70	3.26	67	60	35	1980
CC 705-NA	705	DN65	460 / 3 / 60	175	13.00	6.18	83	71	48	3520

Attainable residual oil outlet content is $\leq 0.003 \text{ mg/m}^3$ and under optimum conditions 0.001 mg/m^3 is attainable.

The residual oil content can be monitored continuously using **BEKO METPOINT** OCV devices.

Other models or voltages are available upon request.

Model CC 210-NA and above are constructed with an open frame (no housing).



Operating pressure	psig	60	70	90	100	115	130	145	160	175	190	200	215	232
Correction factor		0.63	0.75	0.88	1.00	1.13	1.25	1.36	1.50	1.63	1.75	1.88	2.00	2.10

All **BEKOKAT**® units are rated for an operating pressure of 100 psig and a max. operating pressure of either 175 or 232 psig.

The performance values refer to an inlet pressure of 100 psig. In the case of a different inlet pressure, please use the respective correction factor from the table above.

Example: CC 105-NA

Capacity at 100 psig / +100 °F inlet: 105 scfm

Factor for 70 psig: 0.75

Capacity at 70 psig operating pressure:
 $105 \text{ scfm} \times 0.75 = 78.75 \text{ scfm}$

HIGH QUALITY COMPRESSED AIR FROM BEKO

The quality of your compressed air.

RELIABLE

The highest level of operational reliability is guaranteed with every product that BEKO manufactures.

EFFICIENT

Maximum energy efficiency and conservation are guiding principles of every product design.

ECONOMIC

Products that provide the quickest return on investment in the industry with the least amount of risk.

EFFECTIVE

German engineered with no compromises on quality.

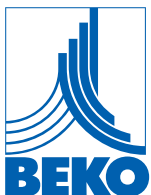
EXPERIENCE

More than 25 years of industry leading experience stands behind our entire product offering.

SOLUTIONS

Your single source for a range of performance compressed air products designed to work in synergy.

*Compressed air treatment and condensate technology.
The complete program. Worldwide.*



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