



CHEMICAL NEUTRALIZATION of unwanted substances present in the air. Reduction of flue gas harmfulness.

Refining and petrochemical Industry.
Production of asphalt and
products based on asphalt binders.



We are part of the French group – WESTRAND INTERNATIONAL with more than 20 years of experience in the production of dosing and fogging equipment and formulations for the neutralization and removal of the cause of unwanted odors and toxic substances present in flue gas or atmospheric air. We offer modern technology for the refining and petrochemical industry – in particular for the production of asphalt and products based on asphalt binders.

WESTRAND technology is a new generation of advanced chemical materials for rapid binding of volatile odorous or noxious compounds. The chemical reactions produce new, odorless compounds with greatly reduced toxicity, which then biodegrade in the environment. Our unique technology is based on complex chemical reactions rather than common masking of unwanted odors. We guarantee an end to the complaints of nearby residents and an improvement in the well-being of the company's technical staff. We have evidence, not promises.

WESTRAND is already present in more than 30 countries around the world, serving numerous unrelated industries and services. More than 3,000 companies are already using our solutions.

We develop an individual and comprehensive program for each company to reduce unwanted emissions into the environment.



Advantages of a chemical neutralization system for gas:

- Immediate neutralization of noxious or malodorous compounds introduced into the environment, consequently less nuisance to local residents and the environment.
- Reduction of the concentration of volatile hydrocarbons as a result of chemical bonding with the active components of our offered formulations from the AIRHITONE group.
- Minimization of respiratory hazards, improvement of the well-being of a company's technical staff, and thus an increase of occupational safety.
- Possibility of automatic operation thanks to integration with gas sensors and the weather station.

The system works when needed.

- Possibility of remote control and visualization of work in e.g.: SCADA system.
- Effective usage in temperatures from -20°C to +200°C.
- Does not suppress gas flow.

Our offer – Dosing equipment:

- **Formulations:** anhydrous, soluble, readily soluble in asphalt
- **Dosing equipment:** fogging nozzles, dynamic dosing with a mixing fan



Programming the operation of equipment with a remote control option.



Dosing cabinets for stack installations.



Dosing the formulation into the contaminated space utilizing a fan.

Our formulations are added directly to the asphalt mixture. They are particularly recommended for bituminous paving in poorly ventilated areas (e.g. tunnels).

The neutralizers we offer increase the protection of employees from the harmful effects of hazardous agents in the workplace.



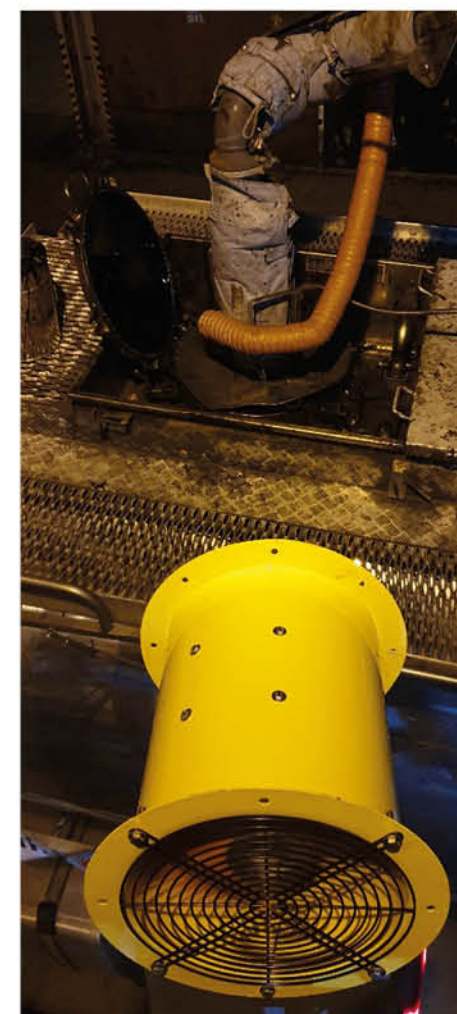
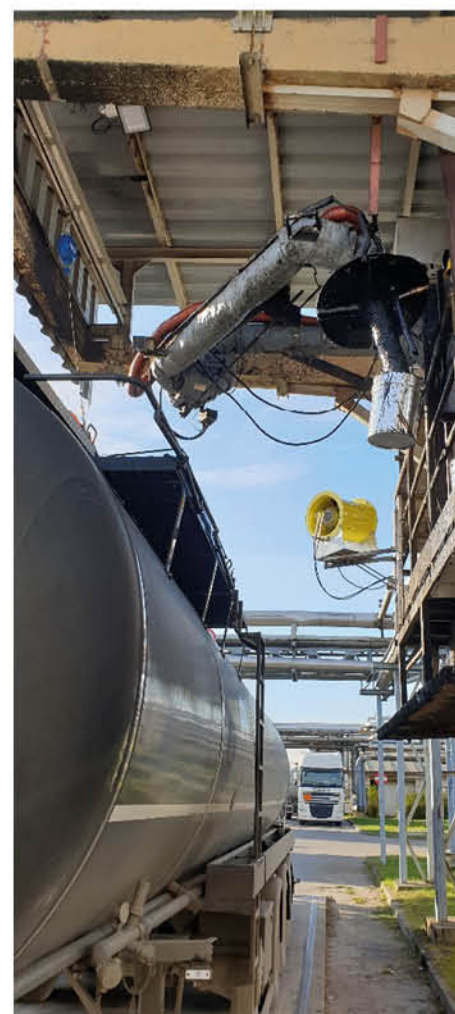
Odorless, neutralized asphalt vapor gas.

Adding the formulation to the asphalt mass. Non-intrusive bituminous paving in poorly ventilated areas (e.g. tunnels). Conflict-free handling during distribution to local plants (tank degassing). Non-noxious emissions from the bituminous masses.



Creation of a curtain to neutralize asphalt vapor gas leaking into the environment during tanking asphalt to a road tanker.

The fan creates a cloud of active air saturated with the AIRHITONE ENR chemical reagent, which dynamically mixes with the vapor gas.



The formulation can be added to asphalt during production or at the stage when it is tanked to a road tanker. Such refined asphalt reaches the bitumen mass-production plant and does not generate odor nuisance for the local community and increases the work safety of technical staff.

We offer gas neutralization solutions for fugitive emissions into the atmosphere.



Nozzles dosing a chemically active formulation.



Neutralization of asphalt vapor emissions during the asphalt mixture loading process.



Neutralization of emissions during high-temperature asphalt storage – tank degassing.
Nozzles dosing a chemically active formulation.



sterne
environnement

Mulhouse, 13th June, 2016

CERTIFICATE

I, the undersigned, Dr Bernard MEYER, Manager of the company STERNE SARL, have controlled the safety data's about the use of the product "INHITONE ENR/ MF P" for deodorization of hot asphalt.

The product • **INHITONE ENR/MF P**

can be used for deodorization of hot asphalt, according following recommendations:
Asphalt temperature below 200°C,
Amount of Asphalt: 25 Tons,
Amount of INHITONE ENR/MF P: 5 Liters or less,
Slow addition of the product by metering pump, during the transfer of 25 Tons hot asphalt, at rate flow no higher than 10 Liters/ Hour of product INHITONE ENR/MF P,
Usual antistatic devices and recommendations.

I noticed that the technical process described by WESTRAND is in conformity with the recommendations.

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Vu exclusivement pour certification
matérielle de la signature de M.
Bernard MEYER
(Seen exclusively to certify the above signature)

13 JUN 2016

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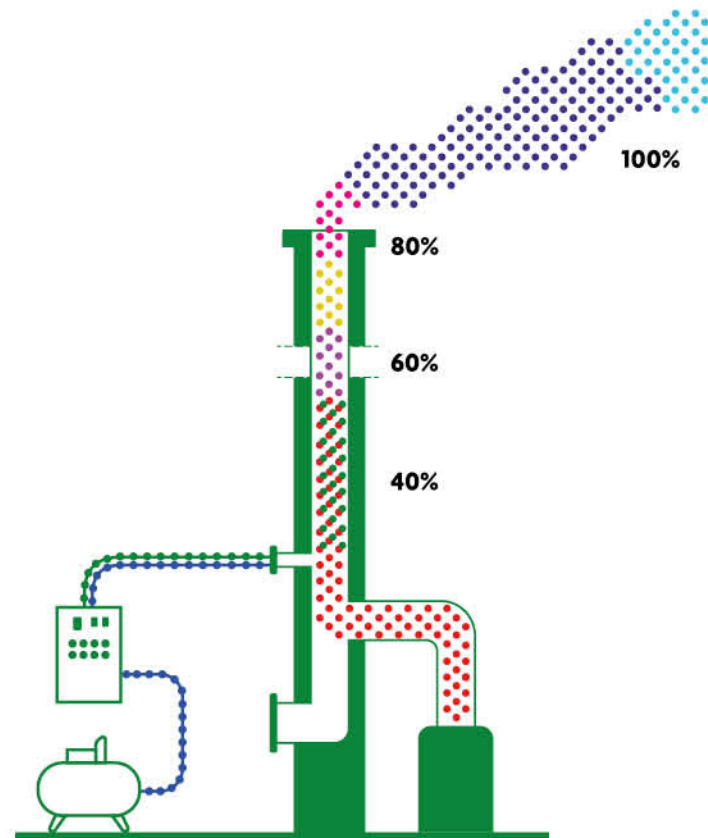
Dr Bernard MEYER
Manager

Our solutions also work well for the neutralization of stack gas emitted directly into the environment.



Neutralization of stack gas in a bitumen mass-production plant.

Equipment dosing a formulation to a stack.



Effectiveness of neutralization over time.

Reactions are not instantaneous and reaction time depends on the composition as well as physical and chemical parameters of the gas to be treated.

Neutralization of ventilation gas.



Formulation dosing point.



Neutralized asphalt vapor gas.

Neutralization of gas emission from mobile installation.



Process installation in petrochemical industry.

In many cases, bad smell emissions come from small sources that often escape our attention. Thanks to our experience and knowledge we offer economical solutions for degassing systems in production installations.



CONTACT

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www.depollution.eu

We can prove that our formulations not only eliminate odor nuisance but also reconstruct the structure of unwanted molecules so that their harmful effect on health will be eliminated. We have studies proving that after the application of our formulations there is a decrease in the concentration of toxic and malodorous compounds found in asphalt and oil-based products.

The formulations are safe for humans and environmentally friendly.

The methods we use are patented and certified. They meet BAT recommendations (BREF CWW) – compliance report.

Dosing systems are TUV SAFETY certified.



dartschSCIENTIFIC
INSTITUT FÜR ZERLEBENDIGKEITSTESTSYSTEME

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Email: info@dartsch-scientific.com
Web: www.dartsch-scientific.com
Schongau – March 18th, 2013

CERTIFICATE

AIRHITONE A4S2 P: DETERMINATION OF ACUTE TOXICITY FOR LUNG

This is to certify that Dartsch Scientific GmbH has tested the product AIRHITONE A4S2 P under the scientific and experimental supervision of Prof. Dr. rer. nat. Peter C. Dartsch, bi-chemist and CEO. Prof. Dr. rer. nat. Peter C. Dartsch has the scientific knowledge and expertise for the evaluation of such in vitro-toxicological examinations.

The test was performed with a standard cell line (L-929, connective tissue mouse fibroblasts for skin contact), according to EN ISO 10993-5 (2009) and, additionally, with a human lung carcinoma cell line (A-549 for inhalation) by the same method.

According to the concentration for use as a dilution of 1/10,000,000 ($\approx 10^{-7}$), e.g. 60 liters of a 1 % AIRHITONE A4S2 P solution is sprayed per 6,000 m³ air volume, the tested concentrations ranged from 10^{-8} to 10^{-4} (maximum test concentration is 1,000 times higher than used practically).

Results & conclusion: Within the tested concentration range, both cell lines did not show any signs of acute toxicity. Thus, we conclude that AIRHITONE A4S2 P does not possess an acute toxic potential for lung up to dilutions of 10^{-4} and is, therefore, "biocompatible" according to EN ISO 10993-5 (2009).



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2013

W. Plessier
Prof. Dr. P.C. Dartsch

Annexe: Detailed test report

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environnement**

Mulhouse, 13th June, 2016

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Dartsch (pour la signature de M.
(Quantité nécessaire à la signature de M.
13 JUIN 2016


Dr Bernard MEYER
Manager



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environnement**

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