Gothenburg, Sweden, 4th June 2008

To whom it may concern

MAINTAINING THE CLEANING EFFICIENCY OF THE VOCSIDIZER

The flameless VOCSIDIZER is designed to efficiently use the energy released by the VAM (Ventilation Air Methane) destructed to bring the next incoming volume of ventilation air up to the natural oxidizing temperature of methane. Since the ventilation air carries an abundance of oxygen required, all VAM passing through the ceramic bed of the VOCSIDIZER will oxidize. **It is not possible for a methane molecule to pass through the hot zone of the VOCSIDIZER with the level of oxygen present in the ventilation air without to oxidize**.

EFFICIENT HEAT TRANSFER

The process is based on the very efficient heat transfer between the ventilation air and the ceramic bed media, and the fact that there is no combustion chamber in the system. The center portion of the ceramic bed is by start up brought (electrically) to a temperature of 1000 degrees C. Only when this temperature is reached, the electrical heaters (used only for start up) is turned off and the VOCSIDIZER process fan starts pushing ventilation air through the ceramic bed. The incoming ventilation air is then very efficiently picking up heat from the heated portion of the ceramic bed. When reaching the natural oxidizing temperature of methane, around 900 degrees C, the dilute methane in the ventilation air (the VAM) will oxidize, releasing its oxidizing energy to the air passing through the VOCSIDIZER. In the back end of the hot zone, the ceramic bed media will be cooler than the air passing through. The efficient heat exchange will then go the other way – from the hot air to the cooler bed media, cooling the air passing through the VOCSIDIZER down so that at a concentration of 0.2% methane (the minimum concentration required to maintain the oxidizing energy of the system – allowing for the VOCSIDIZER to keep oxidizing the next incoming molecules of methane) the temperature difference of ventilation air going into the VOCSIDIZER and coming out of the VOCSIDIZER is only around 40 degrees C.

The passing air is picking up thermal energy (temperature) coming in and leaving thermal energy continuing out of the ceramic bed. In order to avoid moving the hot zone out of the center, the direction of flow is changed every few minutes. In this way, the hot zone is kept in the center portion of the bed. The VAM present in the ventilation air on its way into the system at the moment of changing the direction of flow, passes out if the system without being oxidized. This corresponds to a maximum of 3% of methane that is not destructed.

NO EFFICIENCY DEGENERATION IN VOCSIDIZER OXIDATION ZONE

Since the oxidation is taking place inside the ceramic bed with NO MOVING PARTS and NO CATALYST involved, **the oxidation of the VAM passing through the hot zone of the ceramic bed remains complete**. MEGTEC has chosen NOT to apply any catalyst in order to avoid the risk of catalyst contamination (for example if there would be sulphuric components present in the ventilation air) or the risk of the catalyst being in the need of replacement.

MEGTEC Systems AB
Theres Svenssons gata 10
SE 417 55 GOTHENBURG
Sweden
Phone: +46 31 65 78 00
Fax: +46 31 22 83 19

Gothenburg, Sweden, 4th June 2008

NO COMBUSTION CHAMBER

By NOT applying a combustion chamber, two risks are avoided:

1/ it is avoided that there are streaks of lower temperature through the chamber, whereby it could be possible that some methane passes the combustion chamber without being oxidized

2/ it is avoided to have hot spots, which do occur in an open flame. These are local areas which are superheated to above 1500 degrees C, whereby thermal NOx can be generated.

Both these possibilities are avoided by the flameless combustion of the VOCSIDIZER. All methane molecules passing through the hot zone of the VOCSIDIZER bed are being oxidized.

VOCSIDIZER TEST REPORTS ARE REPRESENTATIVE

The presented measurement reports represent testing done by MEGTEC for the customers. The year of commissioning and the year of the presented test reports are the following. The summarized result of these tests is attached in Appendix.

VOCSIDIZER INSTALLATION	YEAR OF BUILT	YEAR OF TEST REPORT
Swedwood (IKEA)	2003	2004
TEFCO	2001	2004
Elit Fonster	1998	1998
Tetra Pak	1992	1999
Mirka	1997	2000
Volvo Car	1990	1998
Norsk Wallboard	1998	2001

All hydrocarbons have in common that when heated to sufficient temperature, provided that oxygen is present, they oxidize. The cleaning efficiency noted in the reports relate to the respective pollutants all being hydrocarbons, which have natural oxidizing temperatures ranging from approx 750 degrees C to approx 900 degrees C. (Methane is in the upper range of this scale.) **The reports on destruction efficiency of VOC (Volatile Organic Compounds) are representative of the VOCSIDIZER's efficiency on VAM, since VAM is a hydrocarbon and behaves in the same way**.

Richard Mattus
Business Manager
Energy and Process Systems
MEGTEC Systems AB

Email: rmattus@megtec.se
Mobile: +46 705 22 66 10

REPORTS OF MEASURED CLEANING EFFICIENCIES OF VOCSIDIZERS DELIVERED TO EUROPEAN INDUSTRIES

Customer	(efficiency)	Page	Running period provided by the supplier
Swedwood (IKEA)	(98%, 98.4%)	1	1 year
TEFCO (flexo printer)	(98.3%)	5	3 years
Elit fönster (window producer)	(97.4%)	8	<1 year
Tetra Pak	(97.8%)	9	7 years
Mirka	(98.2%)	10	3 years
Volvo Car	(98.5%)	11	8 years
Thyboron (fish meal)	(98.3%)	12	
Norsk Wallboard	(97.6%)	13	3 years