CALCULATION OF ODOUR LEVELS

CERC

In this document 'ADMS' refers to ADMS 5.2, ADMS-Roads 4.1, ADMS-Urban 4.1 and ADMS-Airport 4.1. Where information refers to a subset of the listed models, the model name is given in full.

Odours are typically measured in 'odour units'. The Odours option in ADMS uses the odour unit 'ou_E' defined in the European standard (EN 13725:2003[1]). One ou_E is the mass of pollutant that, when evaporated into 1 m^3 of odourless gas at standard conditions, is at the detection limit.

For non-odours calculations, ADMS calculates mass concentrations in g/m^3 from mass emission rates e.g. g/s for point sources. Since ou_E are a mass measure, they can be treated identically to g. The user specifies emissions in ou_E /s for point sources and results are obtained in ou_E /m^3. **Table 1** gives the standard and odours emissions rates for all source types available in ADMS.

Source type	**Standard emission units**	**Emission units when modelling odours**
Point	g/s	ou_e /s
Jet	g/s	ou_e /s
Line	g/m/s	ou_e /m/s
Road	g/km/s	ou_e/km/s
Area	$g/m^2/s$	ou_e /m^2/s
Volume	$g/m^3/s$	ou_e /m^3/s
Grid	$g/m^2/s$	ou_e /m^2/s
Aircraft	g/s	ou_e /s

Table 1 – Emission rates for source types available in ADMS

For some pollutants, data giving the odour unit strength for a particular g/s release rate are readily available. However, these data are not available for all pollutants, and are not generally available for mixes of pollutants (note that the odour levels for different pollutants should not be summed, as the effects of different pollutants are not additive). If odour unit strength data are not available for the pollutant(s) to be modelled, it may be necessary to use olfactometry to specify the source strength.

[1] Title: 'Air quality – determination of odour concentration by dynamic olfactometry'