ART REPORT – Antifouling paints – 13-Nov-12

Exposure to Copper pyrithione. Example 2 in Advanced REACH Tool (ART): A Bayesian model for exposure assessment

Chemical details	
Chemical	Copper pyrithione
CAS No.	14915-37-8

Scenario details	
Number of activities	1
Total duration (mins)	480
Nonexposure period (mins)	0

Metadata	
ART version	1.5
Creator	Suzanne.spaan@tno.nl
Date created	13-Nov-12
Date last edited	13-Nov-12

Details for Activity Spraying

Emission sources: Near field ✓ Duration (mins): 480

Far field

Near-field exposure

Operational Conditions

Substance emission potential	
Substance product type	Powders dissolved in a liquid or incorporated in a liquid matrix
Liquid matrix weight fraction	0.02
Viscosity	Medium
Activity emission potential	
Activity class	Surface spraying of liquids
Situation	Moderate application rate (0.3 - 3 l/minute)
Spray direction	In any direction (including upwards)
Spray technique	Spraying with no or low compressed air use
Surface contamination	
Process fully enclosed?	No
Effective housekeeping practices in place?	No
General housekeeping practices in place?	Yes
Dispersion	
Work area	Indoors
Room size	1000 m^3

Risk Management Measures

Localised controls	
Primary	No localized controls (0.00 % reduction)
Secondary	No localized controls (0.00 % reduction)
Dispersion	
Ventilation rate	Mechanical ventilation giving at least 1 ACH

Predicted exposure levels

ART predicts air concentrations in a worker's personal breathing zone outside of any Respiratory Protection Equipment (RPE). The use of RPE must be considered separately.

Mechanistic model results

The predicted 50th percentile full-shift exposure is 0.13 mg/m³.

The 90% confidence interval is 0.022 mg/m³ to 0.74 mg/m³.

Bayesian model results

Data source	Proj. ref.	No. of sites	No. of workers	No. of records
Spraying operators of antifouling paint	HSE guidance document EH74/3	11	21	21
Antifouling spraying	Hughson et. al. 2004	1	4	4
	Totals	12	25	25

The predicted 50th percentile full-shift exposure is 0.062 mg/m³.

The 90% confidence interval is 0.035 mg/m³ to 0.11 mg/m³.