

***Generic risk
assessment models for
insecticide-treated
clothing, skin-applied
repellents and
household insecticides***



World Health
Organization

Generic risk assessment models for insecticide-treated clothing, skin-applied repellents and household insecticides



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TERMINOLOGY, ABBREVIATIONS AND ACRONYMS

ADI	acceptable daily intake
a.i.	active ingredient
ARfD	acute reference dose
AUC	area under curve
BMD	benchmark dose
CIPAC	Collaborative International Pesticides Analytical Council
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GLP	good laboratory practice
HHPs	highly hazardous pesticides
IPCS	International Programme on Chemical Safety
ITC	insecticide-treated clothing
JECFA	Joint FAO/WHO Expert Committee on Food Additives
JMPM	Joint FAO/WHO Meeting on Pesticide Management
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
LOAEL	lowest-observed-adverse-effect level
NOAEL	no-observed-adverse-effect level
OECD	Organization for Economic Co-operation and Development
OEL	occupational exposure limit
TSD	tolerable systemic dose
TSDAC	tolerable systemic dose, acute exposure
TWA	time-weighted average
UF	uncertainty factor
USEPA	United States Environmental Protection Agency
WHO	World Health Organization

1 PURPOSE AND SCOPE

This document provides generic models that can be used for the risk assessment of three types of products which may be used by consumers (usually individuals who are not professional pest control operators) to protect themselves from insects.

More specifically, the products, situations and users covered by these risk assessment models can be summarized as follows:

- products to control disease vectors or nuisance insects;
- products used by individuals who are not professional pesticide users or pest control operators, and which are generally made available for purchase by any user without restrictions (typically “over-the-counter” sale);
- products commonly used in domestic or residential situations, but also during outdoor leisure activities or to protect workers who work outdoors;
- products used in workplaces or by workers during their work, but only where the focus of the work is not pesticide application or pest control.

Use of the terms “pesticide” and “insecticide” in this document should be broadly interpreted to refer to all forms of insect control, including repellents and treated clothing. Reference to “insecticidal action” refers to both killing and excito-repellency of insects.

The product types included are as follows:

- **insecticide-treated clothing**, including clothing which has been treated in the factory and self-treated clothing, covering use of both insecticides and repellents and of use by persons seeking protection from insects while outdoors (including outdoor work);
- **skin-applied insect repellents**, used by individuals to keep insects away from the skin (by consumers and their families, and also possibly by outdoor workers such as forestry workers); and
- **household insecticides**, used by consumers to keep insects away from their homes

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