

Instructions for using the workbook

The information required for the exposure assessment needs to be entered in the worksheet "**Data entry**".

In the following worksheets formulas calculate the exposure values automatically

Worksheet "**Operator Outdoor Spray AOEM**" is to be for outdoor spray applications. PPE options can be selected in this worksheet

Worksheet "**Operator Granules**" is for granular applications. Currently the calculator does not allow operator exposure for indoor applications. PPE options can be selected in this worksheet

Worksheets "**Resident exposure**" and "**Bystander exposure**" are only relevant for outdoor applications

Worksheet "**Recreational Exposure**" is only applicable for golf course, turf, other sports lawns or amenity turf/grassland areas where members of the public are likely to have access

The combined results of the exposure assessment are presented in worksheet "**Summary**"

This calculator should be used in conjunction with the **Guidance on the Assessment of Exposure for Operators, Workers, Residents and Bystanders in Risk Assessment for Plant Protection Products**

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Note: Some drop-down menus depend on others. To avoid errors, please fill-in from top to bottom

Substance name	lambda-cyhalothrin
Product name	Karate Zeon
Reference value non acutely toxic active substance (RVNAS)	0,0025 mg/kg bw/day
Reference value acutely toxic active substance (RVAAS)	0,0025 mg/kg bw/day
Crop type	Ornamentals
Substance properties	
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.
Minimum volume water for application (liquids)	150 L/ha
Maximum application rate of active substance	0,005 kg a.s. /ha
50% Dissipation Time DT50	30 days
Initial Dislodgeable Foliar Residue	3 µg/cm ² of foliage/kg a.s. applied/ha
Dermal absorption of product	0,30%
Dermal absorption of in-use dilution	0,30%
Oral absorption of active substance	50,00%
Inhalation absorption of active substance	100,00%
Vapour pressure of active substance	low volatile substances having a vapour pressure of $5 \cdot 10^{-3}$ Pa
Scenario	
Indoor or Outdoor application	Outdoor
Application method	Downward spraying
Application equipment	Vehicle-mounted
Buffer strip	2-3 m
Number of applications	18
Interval between multiple applications	7 days
Season (upward spraying orchards only)	not relevant

Exposure assessment

Substance	lambda-cyhalothrin	Formulation = Soluble concentrates, emulsifiable concentrate, etc.	Application rate-0,005 kg a.s. /ha	Spray dilution = 0,0333333333333333 g a.s./l	Vapour pressure = low volatile substances having a vapour pressure of <5*10-3Pa
Scenario	Ornamentals / Outdoor / Downward spraying / Vehicle-mounted			Buffer = 2-3	Number applications = 18, Application interval = 7 days
Percentage Absorption	Dermal for product = 0,3	Dermal for in use dilution = 0,3	Oral = 50	Inhalation = 100	
RVNAS	0,0025 mg/kg bw/day		RVAAS	0,0025 mg/kg bw/day	
DFR	3 µg a.s./cm2 per kg a.s./ha		DT50	30 days	

Operator Model	Mixing, loading and application AOEM			
Potential exposure	Longer term systemic exposure mg/kg bw/day	0,0001	% of RVNAS	4,03%
	Acute systemic exposure mg/kg bw/day	0,0022	% of RVAAS	88,05%
Mixing and Loading	Gloves = No	Clothing = Work wear - arms, body and legs covered	RPE = None	Soluble bags = No
Application	Gloves = No	Clothing = Work wear - arms, body and legs covered	RPE = None	Closed cabin = No
Exposure (including PPE options above)	Longer term systemic exposure mg/kg bw/day	0,0001	% of RVNAS	2,94%
	Acute systemic exposure mg/kg bw/day	0,0007	% of RVAAS	27,46%

Worker - Cutting, sorting, bundling, carrying	Potential exposure mg/kg bw/day	0,0005	% of RVNAS	21,28%
	Working clothing mg/kg bw/day	0,0002	% of RVNAS	7,60%
	Working clothing and gloves mg/kg bw/day	0,0001	% of RVNAS	2,13%

Resident - child	Spray drift (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,14%
	Vapour (75th percentile) mg/kg bw/day	0,0011	% of RVNAS	42,80%
	Surface deposits (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,57%
	Entry into treated crops (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,64%
	All pathways (mean) mg/kg bw/day	0,0011	% of RVNAS	43,79%
Resident - adult	Spray drift (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,03%
	Vapour (75th percentile) mg/kg bw/day	0,0002	% of RVNAS	9,20%
	Surface deposits (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,03%
	Entry into treated crops (75th percentile) mg/kg bw/day	0,0000	% of RVNAS	0,36%
	All pathways (mean) mg/kg bw/day	0,0002	% of RVNAS	9,52%

Bystander - child	Spray drift (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	0,39%
	Vapour (95th percentile) mg/kg bw/day	0,0011	% of RVAAS	42,80%
	Surface deposits (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	1,51%

Exposure assessment

	Entry into treated crops (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	0,64%
Bystander - adult	Spray drift (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	0,08%
	Vapour (95th percentile) mg/kg bw/day	0,0002	% of RVAAS	9,20%
	Surface deposits (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	0,08%
	Entry into treated crops (95th percentile) mg/kg bw/day	0,0000	% of RVAAS	0,36%
Recreational Exposure		Child % of RVNAS		Adult % of RVNAS

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Operator exposure for Karate Zeon outdoor spray applications

Application rate of active substance	0,005 kg a.s./ha	<i>i_AppRate</i>
Assumed area treated	10 ha/day	<i>d_AreaTreated</i>
Amount of active substance applied	0,05 kg a.s./day	<i>i_AmountAS</i>
Dermal absorption of the product	0,30%	<i>i_AbsorpProduct</i>
Dermal absorption of in-use dilution	0,30%	<i>i_AbsorInuse</i>
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.	
Indoor or Outdoor application	Outdoor	
Application method	Downward spraying	
Application equipment	Vehicle-mounted	
Season	not relevant	

	Exposure values	µg exposure/day mixed and loaded		Reference	Comment
		75 th centile	95 th centile		
Mixing and loading	Hands	484	1727	AOEM	
	Body	434	30165	AOEM	
	Head	3	251	AOEM	
	Protected hands (gloves)	5	10	AOEM	
	Protected body (workwear or protective garment and sturdy footwear)	2	7	AOEM	
	Protected head (hood and face shield)	0	14	AOEM	
	Inhalation	2	27	AOEM	
	Protective Equipment	Select for inclusion		Penetration factor	Inhalation Protection factor
	Gloves	No			
	Clothing	Work wear - arms, body and legs covered		Incl. in AOEM model	
Head and respiratory PPE	None		1	1	
Water soluble bag	No		1		

	Exposure values	µg exposure/day applied		Reference	Comment
		75 th centile	95 th centile		
Application	Hands	81	418	AOEM	This scenario assumes that small area equipment is used
	Body	111	141	AOEM	
	Head	1	8	AOEM	
	Protected hands (gloves)	4	15	AOEM	
	Protected body (workwear or protective garment and sturdy footwear)	1	2	AOEM	
	Inhalation	1	7	AOEM	
	Protective Equipment	Select for inclusion		Penetration factor	Inhalation Protection factor
	Gloves	No			
	Clothing	Work wear - arms, body and legs covered		Incl. in AOEM model	
	Head and respiratory PPE	None		1	1
Closed cab	No		vehicle mounted upward spraying only		

1. Total

	Without RPE/PPE	With RPE/PPE
Longer term		
Total systemic exposure from mixing, loading and application (mg a.s./day)	0,0060439	0,0044167
Total systemic exposure from mixing, loading and application per kg body weight (mg/kg bw/day)	0,0001007	0,0000736
% of RVNAS	4,03%	2,94%
Acute		
Total systemic exposure from mixing, loading and application (mg a.s./day)	0,1320819	0,0411921

Total systemic exposure from mixing, loading and application per kg body weight (mg/kg bw/day)	0,0022014	0,0006865	
% of RVAAS	88,05%	27,46%	

2. Longer term exposure

2.1 Mixing and loading

	Systemic exposure [$\mu\text{g a.s. /day}$]	Systemic exposure [$\mu\text{g a.s./kg}$]	Formula
Without RPE/PPE			
Hands	1,4518085	0,0241968	D15*i_AbsorpProduct
Body	1,3029215	0,0217154	D16*i_AbsorpProduct
Head	0,0077825	0,0001297	D17*i_AbsorpProduct
Inhalation	1,5177962	0,0252966	D21*i_AbsorpInhalation
Sum	4,2803087	0,0713385	
With RPE/PPE (as selected above)			
Hands	1,4518085	0,0241968	D18*i_AbsorpProduct
Body	0,0050109	0,0000835	D19*i_AbsorpProduct or D15*i_AbsorpProduct*F24
Head	0,0077825	0,0001297	D20*i_AbsorpProduct or D17*i_AbsorpProduct*F25
Inhalation	1,5177962	0,0252966	D21*i_AbsorpInhalation*G25
Sum	2,9823982	0,0497066	
Water soluble bag	2,9823982	0,0497066	C70*F26

2.2 Application

	Systemic exposure [$\mu\text{g a.s. /day}$]	Systemic exposure [$\mu\text{g a.s./kg}$]	Formula
Without RPE/PPE			
Hands	0,2430490	0,0040508	D30*i_AbsorpInuse
Body	0,3334709	0,0055578	D31*i_AbsorpInuse
Head	0,0019966	0,0000333	D32*i_AbsorpInuse
Inhalation	1,1851143	0,0197519	D35*i_AbsorpInhalation
Sum	1,7636308	0,0293938	
With RPE/PPE (as selected above)			
Hands	0,2430490	0,0040508	D33*i_AbsorpInuse
Body	0,0041703	0,0000695	D34*i_AbsorpInuse or D31*i_AbsorpInuse*F38
Head	0,0019966	0,0000333	D32*i_AbsorpInuse*F39
Inhalation	1,1851143	0,0197519	D35*i_AbsorpInuse*G39
Sum	1,4343301	0,0239055	

3. Acute exposure

3.1 Mixing and loading

	Systemic exposure [$\mu\text{g a.s. /day}$]	Systemic exposure [$\mu\text{g a.s./kg}$]	Formula
Without RPE/PPE			
Hands	5,1806802	0,0863447	E15*i_AbsorpProduct
Body	90,4941798	1,5082363	E16*i_AbsorpProduct
Head	0,7536006	0,0125600	E17*i_AbsorpProduct
Inhalation	26,7369051	0,4456151	E21*i_AbsorpInhalation
Sum	123,1653657	2,0527561	
With RPE/PPE (as selected above)			
Hands	5,1806802	0,0863447	E18*i_AbsorpProduct
Body	0,0219377	0,0003656	E19*i_AbsorpProduct or E16*i_AbsorpProduct*F24
Head	0,7536006	0,0125600	E20*i_AbsorpProduct or E17*i_AbsorpProduct*F25
Inhalation	26,7369051	0,4456151	E21*i_AbsorpInhalation*G25
Sum	32,6931236	0,5448854	
Water soluble bag	32,6931236	0,5448854	C104*F26

2.2 Application

	Systemic exposure [$\mu\text{g a.s. /day}$]	Systemic exposure [$\mu\text{g a.s./kg}$]	Formula
Without RPE/PPE			
Hands	1,2532369	0,0208873	E30*i_AbsorpInuse
Body	0,4225529	0,0070425	E31*i_AbsorpInuse
Head	0,0234374	0,0003906	E32*i_AbsorpInuse
Inhalation	7,2173474	0,1202891	E35*i_AbsorpInhalation
Sum	8,9165746	0,1486096	
With RPE/PPE (as selected above)			
Hands	1,2532369	0,0208873	E33*i_AbsorpInuse
Body	0,0049282	0,0000821	E34*i_AbsorpInuse or E31*i_AbsorpInuse*F38
Head	0,0234374	0,0003906	E32*i_AbsorpInuse*F39

Inhalation	7,2173474	0,1202891	<i>E35*1_Absorpinhalation*G39</i>
Sum	8,4989500	0,1416492	

Operator exposure for Karate Zeon granular applications

Application rate of active substance	0,005 kg a.s./ha	<i>i_AppRate</i>
Assumed area treated	10 ha/day	<i>d_AreaTreated</i>
Amount of active substance applied	0,05 kg a.s./day	<i>i_AmountAS</i>
Dermal absorption of the product	0,30%	<i>i_AbsorpProduct</i>
Dermal absorption of in-use dilution	0,30%	<i>i_AbsorInuse</i>
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.	
Indoor or Outdoor application	Outdoor This sheet is only to be used for granular applications	
Application method	Downward spraying	
Application equipment	Vehicle-mounted	

	Exposure values	mg exposure/kg a.s. mixed and loaded		Reference	Comment
		75 th centile	95 th centile		
Mixing and loading	Hands	#N/A	#N/A	#N/A	#N/A
	Body	#N/A	#N/A	#N/A	#N/A
	Inhalation	#N/A	#N/A	#N/A	#N/A
	Protective Equipment	Choose item		Penetration factor	
	Gloves	Chemical resistant gloves			Protection for granules exposure is based on measured values
	Body PPE	Certified protective coverall			
	RPE	None		1	

	Exposure values	mg exposure/kg a.s. applied		Reference	Comment
		75 th centile	95 th centile		
Application	Hands	#N/A	#N/A	#N/A	#N/A
	Body	#N/A	#N/A	#N/A	#N/A
	Inhalation	#N/A	#N/A	#N/A	#N/A
	Protective Equipment	Choose item		Penetration factor	
	Gloves	Chemical resistant gloves			Protection for granules exposure is based on measured values
	Body PPE	Certified protective coverall			
	RPE	FP1, P1 and similar		0,25	

1. Total

	Without RPE/PPE	With RPE/PPE
Longer term		
Total systemic exposure from mixing, loading and application (mg a.s./day)	#N/A	#N/A
Total systemic exposure from mixing, loading and application per kg body weight (mg/kg bw/day)	#N/A	#N/A
% of RVNAS	#N/A	#N/A
Acute		

Total systemic exposure from mixing, loading and application (mg a.s./day)	#N/A	#N/A	
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Total systemic exposure from mixing, loading and application per kg body weight (mg/kg bw/day)	#N/A	#N/A
% of RVAAS	#N/A	#N/A

2. Longer term exposure

2.1 Mixing and loading

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula
Without RPE/PPE			
Hands	#N/A	#N/A	$D14*100*i_AmountAS*i_AbsorpProduct$
Body	#N/A	#N/A	$D15*100*i_AmountAS*i_AbsorpProduct$
Inhalation	#N/A	#N/A	$D16*i_AmountAS*i_AbsorpInhalation$
Sum	#N/A	#N/A	
With RPE/PPE (as selected above)			
Hands	#N/A	#N/A	$D14*i_AmountAS*i_AbsorpProduct$
Body	#N/A	#N/A	$D15*i_AmountAS*i_AbsorpProduct$
Inhalation	#N/A	#N/A	$D16*i_AmountAS*i_AbsorpInhalation*F20$
Sum	#N/A	#N/A	

2.2 Application

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula
Without RPE/PPE			
Hands	#N/A	#N/A	$D25*100*i_AmountAS*i_AbsorpInuse$
Body	#N/A	#N/A	$D26*100*i_AmountAS*i_AbsorpInuse$
Inhalation	#N/A	#N/A	$D27*i_AmountAS*i_AbsorpInhalation$
Sum	#N/A	#N/A	
With RPE/PPE (as selected above)			
Hands	#N/A	#N/A	$D25*i_AmountAS*i_AbsorpInuse$
Body	#N/A	#N/A	$D26*i_AmountAS*i_AbsorpInuse$
Inhalation	#N/A	#N/A	$D27*i_AmountAS*i_AbsorpInhalation*F31$
Sum	#N/A	#N/A	

3. Acute exposure

3.1 Mixing and loading

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula
Without RPE/PPE			
Hands	#N/A	#N/A	$E14*100*i_AmountAS*i_AbsorpProduct$
Body	#N/A	#N/A	$E15*100*i_AmountAS*i_AbsorpProduct$
Inhalation	#N/A	#N/A	$E16*i_AmountAS*i_AbsorpInhalation$
Sum	#N/A	#N/A	
With RPE/PPE (as selected above)			
Hands	#N/A	#N/A	$E14*100*i_AmountAS*i_AbsorpProduct$
Body	#N/A	#N/A	$E15*100*i_AmountAS*i_AbsorpProduct$
Inhalation	#N/A	#N/A	$E16*i_AmountAS*i_AbsorpInhalation*F20$
Sum	#N/A	#N/A	

3.2 Application

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula
Without RPE/PPE			
Hands	#N/A	#N/A	$E25*100*i_AmountAS*i_AbsorpInuse$
Body	#N/A	#N/A	$E25*100*i_AmountAS*i_AbsorpInuse$
Inhalation	#N/A	#N/A	$E26*i_AmountAS*i_AbsorpInhalation$
Sum	#N/A	#N/A	

With RPE/PPE (as selected above)			
Hands	#N/A	#N/A	$E25 \cdot 100 \cdot i_AmoutAS \cdot i_Absorpinuse$
Body	#N/A	#N/A	$E26 \cdot 100 \cdot i_AmoutAS \cdot i_Absorpinuse$
Inhalation	#N/A	#N/A	$E27 \cdot i_AmoutAS \cdot i_Absorpinhalation \cdot F31$
Sum	#N/A	#N/A	

Worker exposure from residues on foliage for Karate Zeon

Crop type	Ornamentals		
Indoor or outdoor	Outdoor		
Application method	Downward spraying		
Application equipment	Vehicle-mounted		
Worker's task	Cutting, sorting, bundling, carrying		
Main body parts in contact with foliage	Hand and body		
Application rate of active substance	0,005 kg a.s./ha	<i>i_AppRate</i>	
Number of applications	18	<i>i_AppNo</i>	
Interval between multiple applications	7 days	<i>i_AppInt</i>	
Half-life of active substance	30 days	<i>d_HalfLifeAS</i>	
Multiple application factor	6,3	<i>d_MAF</i>	
Dermal absorption of the product	0,30%	<i>i_AbsorpProduct</i>	
Dermal absorption of the in-use dilution	0,30%	<i>i_AbsorpInuse</i>	
Dislodgeable foliar residue (<i>i_AppRate</i> * <i>i_DFR</i>)	0,015 µg a.s./cm ²	<i>d_DFR</i>	
Working hours	8 hr	<i>d_WorkHr</i>	
Dermal transfer coefficient - Total potential exposure	14000 cm ² /hr	<i>d_DermTcUCV</i>	
Dermal transfer coefficient - arms, body and legs covered	5000 cm ² /hr	<i>d_DermTcCV1</i>	
Dermal transfer coefficient - hands, arms, body and legs covered	1400 cm ² /hr	<i>d_DermTcCV2</i>	
Inhalation transfer coefficient for automated applications	NA ha/hr*10 ⁽⁻³⁾	<i>d_InhalTcAut</i>	
Inhalation transfer coefficient for cutting ornamentals	NA ha/hr*10 ⁽⁻³⁾	<i>d_InhalTcCut</i>	
Inhalation transfer coefficient for sorting / bundling ornamentals	NA ha/hr*10 ⁽⁻³⁾	<i>d_InhalTcSort</i>	

1. Total

	Potential exposure	Work wear - arms, body and legs covered	Working wear and gloves	Comments
Total systemic exposure (mg a.s./day)	0,0319138	0,0113978	0,0031914	
Total systemic exposure per kg body weight (mg/kg bw/day)	0,0005319	0,0001900	0,0000532	
% of RVNAS	21,28%	7,60%	2,13%	

2. Details

	Systemic exposure		Formula	Comments
	[mg a.s. /day]	[mg a.s./kg bw/day]		
Dermal - Potential	0,0319138	0,0005319	$d_DermTcUCV * d_WorkHr * i_DFR * i_MAF / 1000 * i_AbsorpInuse$	
Dermal - Work wear - arms, body and legs covered	0,0113978	0,0001900	$d_DermTcCV1 * d_WorkHr * d_DFR * d_MAF / 1000 * i_AbsorpInuse$	
Dermal - Working wear and gloves	0,0031914	0,0000532	$d_DermTcCV2 * d_WorkHr * d_DFR * d_MAF / 1000 * i_AbsorpInuse$	
Inhalation				Na for outdoor activities

Resident exposure for Karate Zeon

Croptype	Ornamentals	
Application method	Downward spraying	
Application equipment	Vehicle-mounted	<i>i_AppEquip</i>
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.	<i>i_FormVal</i>
Buffer strip	2-3 m	<i>i_Buffer</i>
Application rate of the product	0,005 kg a.s./ha	<i>i_AppRate</i>
Concentration of active substance (in-use dilution for liquid applications)	0,033333333 g a.s./l	<i>d_ConcAS</i>
Dermal absorption of product	0,30%	<i>i_AbsorpProduct</i>
Dermal absorption of in-use dilution	0,30%	<i>i_AbsorpInuse</i>
Oral absorption	50,00%	<i>i_AbsorpOrallnuse</i>
Dislodgeable foliar residue ($i_AppRate * i_DFR$)	0,015 $\mu\text{g a.s./cm}^2$	<i>d_DFR</i>
Vapour pressure of in-use dilution	low volatile substances having a vapour pressure of $<5 * 10^{-3} \text{Pa}$	<i>i_Volat</i>
Concentration in air	0,001 mg/m^3	<i>d_AirCon</i>
Resident dermal spray drift exposure 75th percentile - adult	0,47 ml spray dilution/person	
Resident dermal spray drift exposure 75th percentile - child	0,327 ml spray dilution/person	
Resident inhal. spray drift exposure 75th percentile - adult	0,00010 ml spray dilution/person	
Resident inhal. spray drift exposure 75th percentile - child	0,00022 ml spray dilution/person	
Resident dermal spray drift exposure mean - adult	0,22318 ml spray dilution/person	
Resident dermal spray drift exposure mean - child	0,18 ml spray dilution/person	
Resident inhal. spray drift exposure mean - adult	0,00009 ml spray dilution/person	
Resident inhal. spray drift exposure mean - child	0,00017 ml spray dilution/person	
Exposure duration dermal	2 hours	<i>d_ReExpDur</i>
Exposure duration inhalation	24 hours	<i>d_ReExpDurInhal</i>
Exposure duration entry into treated crops	0,25 hours	<i>d_ExpDurTreatCrop</i>
Light clothing adjustment factor	18,0%	<i>d_ClothAF</i>
Breathing rate adult	0,23 $\text{m}^3/\text{day}/\text{kg}$	<i>d_BreathRAD</i>
Breathing rate child (1-3 year old)	1,07 $\text{m}^3/\text{day}/\text{kg}$	<i>d_BreathRCh</i>
Drift percentage on surface (75th percentile)	5,60%	
Drift percentage on surface (mean)	4,10%	
Turf transferable residues percentage	5,00%	<i>d_Turf</i>
Transfer coeff. of surface deposits-adult	7300 cm^2/hour	<i>d_ReTCAd</i>
Transfer coeff. of surface deposits-child (1-3 year old)	2600 cm^2/hour	<i>d_ReTCCh</i>
Saliva extraction percentage	50,00%	<i>d_SalExt</i>
Surface area of hands mouthed	20 cm^2	<i>d_AreaHM</i>
Frequency of hand to mouth activity	9,5 events/hour	<i>d_ReFreqHM</i>
Ingestion rate for mouthing of grass per day	25 cm^2	<i>d_MouthGrass</i>
Dislodgeable residues percentage transferability for object to mouth	20,00%	<i>d_DRP</i>
Transfer coefficient for entry into treated crops (75th percentile) - adult	7500 cm^2/h	<i>d_TcEntryAd</i>
Transfer coefficient for entry into treated crops (75th percentile) - child	2250 cm^2/h	<i>d_TcEntryCh</i>
Transfer coefficient for entry into treated crops (mean) - adult	5980 cm^2/h	<i>d_TcEntryAd</i>
Transfer coefficient for entry into treated crops (mean) - child	1794 cm^2/h	<i>d_TcEntryCh</i>

1. Total

1.1 1-3 year old child

	Spray drift (75th percentile)	Vapour (75th percentile)	Surface deposits (75th percentile)	Entry into treated crops (75th percentile)	All pathways (mean)
Total systemic exposure (mg a.s./day)	0,0000341	0,0107000	0,0001424	0,0001603	0,0109468
Total systemic exposure per kg body weight (mg/kg bw/day)	0,0000034	0,0010700	0,0000142	0,0000160	0,0010947
% of RVNAS	0,14%	42,80%	0,57%	0,64%	43,79%

1.2 Adult

	Spray drift	Vapour	Surface deposits	Entry into treated crops	All pathways (mean)
Total systemic exposure (mg a.s./day)	0,0000419	0,0138000	0,0000388	0,0005343	0,0142757
Total systemic exposure per kg body weight (mg/kg bw/day)	0,0000007	0,0002300	0,0000006	0,0000089	0,0002379
% of RVNAS	0,03%	9,20%	0,03%	0,36%	9,52%

2. Resident exposure 75th Percentile

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula	Comments
1-3 year old child				
Spray drift	0,0000341	0,0000034	$((C16 * i_AbsorpInuse * (1 - d_ClothAF)) + C18) * d_ConcAS$	
Vapour	0,0107000	0,0010700	$d_AirCon * d_BreathRCh * d_BwChild$	
Surface deposits				
Dermal	0,0000138	0,0000014	$(i_AppRate / 100) * C29 * d_Turf * d_ReTCCh * d_ReExpDur * MAX(i_AbsorpProduct, i_AbsorpInuse) * d_MAF * IF(i_AppEquip = "Vehicle-mounted-Drift Reduction", 0.5, 1)$	
Hand to mouth	0,0000842	0,0000084	$(i_AppRate / 100) * C29 * d_Turf * d_SalExt * d_AreaHM * d_ReFreqHM * d_ReExpDur * i_AbsorpOrallnuse * d_MAF$	
Object to mouth	0,0000443	0,0000044	$(i_AppRate / 100) * C29 * d_DRP * d_MouthGrass * i_AbsorpOrallnuse * d_MAF$	

Entry into treated crops				
Dermal	0,0001603	0,0000160	$(d_TcEntryCh*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	
Hand to mouth			$(i_AppRate/100)*d_Turf*d_MAF*d_SalExt*d_AreaHM*d_ReFreqHM*d_ReExpDur*i_AbsorpOrallnuse$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Object to mouth			$(i_AppRate/100)*d_DRP*d_MouthGrass*i_AbsorpOrallnuse*d_MAF$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Adult				
Spray drift	0,0000419	0,0000007	$(C15*i_Absorplnuse*(1-d_ClothAF))+C17)*d_ConcAS$	
Vapour	0,0138000	0,0002300	$d_AirCon*d_BreathRAD*d_BwAdult$	
Surface deposits (dermal)	0,0000388	0,0000006	$(i_AppRate/100)*C30*d_Turf*d_ReTCAd*d_ReExpDur*i_AbsorpProduct*d_MAF$	
Entry into treated crops (dermal)	0,0005343	0,0000089	$(d_TcEntryAd*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	

3. Summing of exposure pathways mean

	Systemic exposure [mg a.s./day]	Systemic exposure [mg a.s./kg bw/day]	Formula	Comments
1-3 year old child				
Spray drift	0,0000148	0,0000015	$((C20*i_Absorplnuse*(1-d_ClothAF))+C22)*d_ConcAS$	
Vapour	0,0107000	0,0010700	$d_AirCon*d_BreathRCh*d_BwChild$	
Surface deposits				
Dermal	0,0000101	0,0000010	$(i_AppRate/100)*C30*d_Turf*d_ReTCCh*d_ReExpDur*MAX(i_AbsorpProduct,i_Absorplnuse)*d_MAF*IF(i_AppEquip = "Vehicle-mounted-Drift Reduction",0.5,1)$	
Hand to mouth	0,0000617	0,0000062	$(i_AppRate/100)*C30*d_Turf*d_SalExt*d_AreaHM*d_ReFreqHM*d_ReExpDur*i_AbsorpOrallnuse*d_MAF$	
Object to mouth	0,0000325	0,0000032	$(i_AppRate/100)*C30*d_DRP*d_MouthGrass*i_AbsorpOrallnuse*d_MAF$	
Entry into treated crops				
Dermal	0,0001278	0,0000128	$(d_TcEntryMeanCh*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	
Hand to mouth			$(i_AppRate/100)*1*d_Turf*d_MAF*d_SalExt*d_AreaHM*d_ReFreqHM*d_ReExpDur*i_AbsorpOrallnuse$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Object to mouth			$(i_AppRate/100)*1*d_DRP*d_MouthGrass*i_AbsorpOrallnuse*d_MAF$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Adult				
Spray drift	0,0000213	0,0000004	$"(C19*i_Absorplnuse*(1-d_ClothAF))+C21)*d_ConcAS"$	
Vapour	0,0138000	0,0002300	$d_AirCon*d_BreathRAD*d_BwAdult$	
Surface deposits (dermal)	0,0000284	0,0000005	$(i_AppRate/100)*C30*d_Turf*d_ReTCAd*d_ReExpDur*MAX(i_AbsorpProduct,i_Absorplnuse)*d_MAF*IF(i_AppEquip = "Vehicle-mounted-Drift Reduction",0.5,1)$	
Entry into treated crops (dermal)	0,0004260	0,0000071	$(d_TcEntryMeanAd*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	

Bystander exposure for Karate Zeon

Croptype	Ornamentals		
Application method	Downward spraying		
Application equipment	Vehicle-mounted		<i>i_AppEquip</i>
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.		
Application rate of the product	0,005 kg a.s./ha		<i>i_AppRate</i>
Buffer strip	2-3 m		<i>i_Buffer</i>
Concentration of active substance (in-use dilution for liquid applications)	0,033333333 g a.s./l		<i>d_ConcAS</i>
Dermal absorption of product	0,30%		<i>i_AbsorpProduct</i>
Dermal absorption of in-use dilution	0,30%		<i>i_Absorplnuse</i>
Oral absorption	50,00%		<i>i_AbsorpOrallnuse</i>
Dislodgeable foliar residue ($i_AppRate * i_DFR$)	0,015 $\mu\text{g a.s./cm}^2$		<i>d_DFR</i>
Vapour pressure of in-use dilution	low volatile substances having a vapour pressure of $<5 * 10^{-3}\text{Pa}$		<i>i_Volat</i>
Concentration in air	0,001 mg/m^3		<i>d_AirCon</i>
Bystander dermal spray drift exposure - adult	1,21 ml spray dilution/person		
Bystander dermal spray drift exposure - child	0,74 ml spray dilution/person		
Bystander inhal. spray drift exposure - adult	0,00050 ml spray dilution/person		
Bystander inhal. spray drift exposure - child	0,00112 ml spray dilution/person		
Exposure duration	2 hours		<i>d_ByExpDur</i>
Exposure duration entry into treated crops	0,25 hours		<i>d_ExpDurTreatCrop</i>
Light clothing adjustment factor	18,0%		<i>d_ClothAF</i>
Breathing rate adult	0,23 $\text{m}^3/\text{hours/kg}$		<i>d_BreathRAD</i>
Breathing rate child (1-3 year old)	1,07 $\text{m}^3/\text{hours/kg}$		<i>d_BreathRCh</i>
Drift percentage on surface (90th percentile)	8,50%		
Turf transferable residues percentage	5,00%		<i>d_Turf</i>
Transfer coeff. of surface deposits-adult	14500 cm^2/hour		<i>d_ByTCAAd</i>
Transfer coeff. of surface deposits-child (1-3 year old)	5200 cm^2/hour		<i>d_ByTCCh</i>
Saliva extraction percentage	50,00%		<i>d_SalExt</i>
Surface area of hands mouthed	20 cm^2		<i>d_AreaHM</i>
Frequency of hand to mouth activity	20 events/hour		<i>d_ByFreqHM</i>
Ingestion rate for mouthing of grass per day	25 cm^2		<i>d_MouthGrass</i>
Dislodgeable residues percentage transferability for object to mouth	20,00%		<i>d_DRP</i>
Transfer coefficient for entry into treated crops - adult	7500 cm^2/h		<i>d_TcEntryAd</i>
Transfer coefficient for entry into treated crops - child	2250 cm^2/h		<i>d_TcEntryCh</i>

1. Total

1.1 1-3 year old child

	Spray drift	Vapour	Surface deposits	Entry into treated crops
Total systemic exposure (mg a.s./day)	0,0000980	0,0107000	0,0003784	0,0001603
Total systemic exposure per kg body weight (mg/kg bw/day)	0,0000098	0,0010700	0,0000378	0,0000160
% of RVAAS	0,39%	42,80%	1,51%	0,64%

1.2 Adult

	Spray drift	Vapour	Surface deposits	Entry into treated crops
Total systemic exposure (mg a.s./day)	0,0001159	0,0138000	0,0001171	0,0005343

Total systemic exposure per kg body weight (mg/kg bw/day)	0,0000019	0,0002300	0,0000020	0,0000089
% of RVAAS	0,08%	9,20%	0,08%	0,36%

2. Details

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula	Comments
1-3 year old child				
Spray drift	0,0000980	0,0000098	$((C16 * i_AbsorpInuse * (1 - d_ClothAF)) + C18) * d_ConcAS$	
Vapour	0,0107000	0,0010700	$d_AirCon * d_BreathRCh * d_BwChild$	
Surface deposits				
Dermal	0,0000420	0,0000042	$(i_AppRate / 100) * C24 * d_Turf * d_ByTCCh * d_ByExpDur * MAX(i_AbsorpProduct, i_AbsorpInuse) * d_MAF * IF(i_AppEquip = "Vehicle-mounted-Drift Reduction", 0.5, 1)$	
Hand to mouth	0,0002691	0,0000269	$(i_AppRate / 100) * C25 * d_Turf * d_SalExt * d_AreaHM * d_ByFreqHM * d_ByExpDur * i_AbsorpOrallnuse * d_MAF$	
Object to mouth	0,0000673	0,0000067	$(i_AppRate / 100) * C25 * d_DRP * d_MouthGrass * i_AbsorpOrallnuse * d_MAF$	

Entry into treated crops				
Dermal	0,0001603	0,0000160	$(d_TcEntryCh*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	
Hand to mouth			$(i_AppRate/100)*d_MAF*d_Turf*d_SalExt*d_AreaHM*d_ByFreqHM*d_ByExpDur*i_AbsorpOrallnuse$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Object to mouth			$(i_AppRate/100)*d_DRP*d_MouthGrass*i_AbsorpOrallnuse*d_MAF$	Considered only for application on grassland and lawns and for application on golf course, turf or other sports lawns.
Adult				
Spray drift	0,0001159	0,0000019	$((C15*i_Absorplnuse*(1-d_ClothAF)t)+C17)*d_ConcAS$	
Vapour	0,0138000	0,0002300	$d_AirCon*d_BreathRAd*d_BwAdult$	
Surface deposits (dermal)	0,0001171	0,0000020	$(i_AppRate/100)*C24*d_Turf*d_ByTCA*d_ByExpDur*MAX(i_AbsorpProduct,i_Absorplnuse)*d_MAF*IF(i_AppEquip="Vehicle-mounted-Drift Reduction",0.5,1)$	
Entry into treated crops (dermal)	0,0005343	0,0000089	$(d_TcEntryAd*0.25*d_DFR*d_MAF)/1000*MAX(i_AbsorpProduct,i_Absorplnuse)$	

Recreational exposure for Karate Zeon

Golf course, turf or other sports lawns		This sheet is only to be used for treatment of grassland used for recreational purposes	
Croptype	Golf course, turf or other sports lawns		
Application method	Downward spraying		
Application equipment	Vehicle-mounted		<i>i_AppEquip</i>
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.		<i>i_FormVal</i>
Application rate of the product	0,005 kg a.s./ha		<i>i_AppRate</i>
Dermal absorption of product	0,30%		<i>i_AbsorpProduct</i>
Dermal absorption of in-use dilution	0,30%		<i>i_Absorpnuse</i>
Oral absorption	50,00%		<i>i_AbsorpOralnuse</i>
Dislodgeable foliar residue (<i>i_AppRate</i> * <i>i_DFR</i>)	0,015 µg a.s./cm ²		<i>d_DFR</i>
Exposure duration dermal	2 hours		<i>d_ReExpDur</i>
Light clothing adjustment factor Adult resident	18,0%		<i>d_ClothAF</i>
Drift percentage on surface	100,00%		
Turf transferable residues percentage	5,00%		<i>d_Turf</i>
Transfer coeff. of surface deposits-adult	7300 cm ² /hour		<i>d_ReTCAd</i>
Transfer coeff. of surface deposits-child (1-3 year old)	2600 cm ² /hour		<i>d_ReTCCh</i>
Saliva extraction percentage	50,00%		<i>d_SalExt</i>
Surface area of hands mouthed	20 cm ²		<i>d_AreaHM</i>
Frequency of hand to mouth activity	9,5 events/hour		<i>d_ReFreqHM</i>
Ingestion rate for mouthing of grass per day	25 cm ²		<i>d_MouthGrass</i>

2. Details

	Systemic exposure [mg a.s. /day]	Systemic exposure [mg a.s./kg bw/day]	Formula	Comments
1-3 year old child				
Surface deposits				
Dermal	0,0002470	0,0000247	$(i_AppRate/100)*C13*d_Turf*d_ReTCCh*d_ReExpDur*MAX(i_AbsorpProduct,i_Absorpnuse)*d_MAF$	
Hand to mouth	0,0015039	0,0001504	$(i_AppRate/100)*C13*d_Turf*d_SalExt*d_AreaHM*d_ReFreqHM*d_ReExpDur*i_AbsorpOralnuse*d_MAF$	
Object to mouth	0,0007915	0,0000792	$(i_AppRate/100)*C13*d_DRP*d_MouthGrass*i_AbsorpOralnuse*d_MAF$	
Total systemic exposure	0,0025423	0,0002542		
% of RVNAS				
Adult				
Surface deposits (dermal)	0,0006934	0,0000116	$(i_AppRate/100)*C13*d_Turf*d_ReTCAd*d_ReExpDur*MAX(i_AbsorpProduct,i_Absorpnuse)*d_MAF$	
% of RVNAS				

<i>d_AirConVol</i>	Concentration in air of moderately volatile substances	0,015 mg/m ³
<i>d_AirConNonVol</i>	Concentration in air of low volatile substances	0,001 mg/m ³
<i>d_AreaHM</i>	Surface area of hands mouthed	20 cm ²
<i>d_AreaTreated</i>	Area treated (defined by crop type)	10 ha
<i>d_BreathRAd</i>	Breathing rate adult residents	0,23 m ³ /day/kg
<i>d_BreathRCh</i>	Breathing rate child (1-3 year old) residents	1,07 m ³ /day/kg
<i>d_BwAdult</i>	Adult body weight	60 kg
<i>d_BwChild</i>	Child body weight (1 to < 3 year olds)	10 kg
<i>d_ByBreathRAd</i>	Breathing rate adult bystander	0,04 m ³ /hours/kg
<i>d_ByBreathRCh</i>	Breathing rate child (1-3 year old) bystander	0,19 m ³ /hours/kg
<i>d_ByExpDur</i>	Exposure duration intense activity breathing rates	2 hours
<i>d_ByFreqHM</i>	Frequency of hand to mouth activity	20 events/hour
<i>d_ByTCAd</i>	Transfer coeff. of surface deposits-adult	14500 cm ² /hour
<i>d_ByTCCh</i>	Transfer coeff. of surface deposits-child (1-3 year old)	5200 cm ² /hour
<i>d_ClothAF</i>	Light clothing adjustment factor resident and bystanders	18,0%
<i>d_ConcAs</i>	Concentration of active substance (in-use dilution for liquid applications)	0,033333333 g a.s./l
<i>d_DFR</i>	Dislodgeable foliar residue (i_AppRate*i_DFR)	0,015 µg a.s./cm ²
<i>d_DRP</i>	Dislodgeable residues percentage transferability for object to mouth	20,0%
<i>d_HalfLifeAS</i>	Half-life of active substance (DT50)	30 days
<i>d_InhalTcAut</i>	Inhalation transfer coefficient for automated applications	NA ha/hr*10 ^{^(-3)}
<i>d_InhalTcCut</i>	Inhalation transfer coefficient for cutting ornamentals	NA ha/hr*10 ^{^(-3)}
<i>d_InhalTcSort</i>	Inhalation transfer coefficient for sorting / bundling ornamentals	NA ha/hr*10 ^{^(-3)}
<i>d_MAF</i>	Multiple application factor	6,33
<i>d_MouthGrass</i>	Ingestion rate for mouthing of grass per day	25 cm ² grass/day
<i>d_ReExpDur</i>	Exposure duration resident dermal	2 hours
<i>d_ReExpDurInhal</i>	Exposure duration resident inhalation	24 hours
<i>d_ExpDurTreatCrop</i>	Exposure duration for resident and bystander entry into treated crops	0,25 hours
<i>d_ReFreqHM</i>	Frequency of hand to mouth activity	9,5 events/hour
<i>d_ReTCAd</i>	Transfer coeff. of surface deposits-adult	7300 cm ² /hour
<i>d_ReTCCh</i>	Transfer coeff. of surface deposits-child (1-3 year old)	2600 cm ² /hour
<i>d_SalExt</i>	Saliva extraction percentage	50,0%
<i>d_TcEntryAd</i>	Transfer coefficient for entry into treated crops 75th percentile - adult	7500 cm ² /h
<i>d_TcEntryCh</i>	Transfer coefficient for entry into treated crops 75th percentile - child	2250 cm ² /h
<i>d_TcEntryMeanAd</i>	Transfer coefficient for entry into treated crops mean - adult	5980 cm ² /h
<i>d_TcEntryMeanCh</i>	Transfer coefficient for entry into treated crops mean - child	1794 cm ² /h
<i>d_Turf</i>	Turf transferable residues percentage	5,0%
<i>d_PctExtrapolation</i>	For exposure value 75 percentiles above this amount linear extrapolation is performed	1,5 kg
<i>d_head75ProtectionFactor</i>	Coefficient to estimate head protection factor 75 th Percentile	1,79422
<i>d_head95ProtectionFactor</i>	Coefficient to estimate head protection factor 95 Percentile	1,24705

sys_KeyOperator Variables for operator exposure lookup key
sys_OperatorModel Operator model

i_IndoorOutdoor&i_FormVal&i_AppMeth&i_AppEquip&

1

RPE reduction factor	
key_MixRPE, ay_MixRPE	
None	1
FP1, P1 and similar	0,25
FP2, P2 and similar	0,1

PPE reduction factor	
key_MixPPEBody, ay_MixPPEBody	
Potential exposure	1
Work wear - arms, body and legs covered	0,1
Certified protective coverall	0,05

PPE reduction factor	
key_MixPPEHead, ay_MixPPEHead	
None	1
Hood	0,5
Hood and visor	0,05
FP1, P1 and similar	0,8
FP2, P2 and similar	0,8

Application: Gloves PPE reduction factor (depending on formulation type)		
key_AppPPEHands, ay_AppPPEHands		
Wettable powder, soluble powder	Chemical resistant gloves	0,05
Granules, fine granules	Chemical resistant gloves	0,05
Wettable granules, soluble granules	Chemical resistant gloves	0,05
Soluble concentrates, emulsifiable concentrate, etc.	Chemical resistant gloves	0,1
Wettable powder, soluble powder	None	1
Granules, fine granules	None	1
Wettable granules, soluble granules	None	1
Soluble concentrates, emulsifiable concentrate, etc.	None	1

Crop dependent exposure parameters										
key_CropType, ay_CropType	Transfer coefficients	Transfer coefficients	1400	Transfer coefficients	Area Treated					
Crop type	Arm, body and legs covered	Total potential exposure	Activity	hours per day	Body parts involved	Hands, arm, body and legs covered	Type of crop for Resident Bystander	Vehicle Mounted Applications		
Bare soil	NA	NA	NA	NA	NA	NA	Field crops	50		
Low berries and other small fruits		3000	5800 Reaching, picking		8 Hand and forearm		750 Field crops	50		
Brassica vegetables		2500	5800 Reaching, picking		8 Hand and body		580 Field crops	50		
Bulb vegetables		2500	5800 Reaching, picking		8 Hand and body		580 Field crops	50		
Cane fruit		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Field crops	10		
Cereals		1400	12500 Inspection, irrigation		2 Hand and body	no TC available for this assessment	Field crops	50		
Citrus fruit		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Fruit crops	10		
Fruiting vegetables		2500	5800 Reaching, picking		8 Hand and body		580 Field crops	50		
Grapes		10100	30000 Hand harvesting		8 Hand and body	no TC available for this assessment	Grapes	10		
Grassland and lawns		1400	12500 Inspection, irrigation		2 Hand and body	no TC available for this assessment	Field crops	50		
Golf course, turf or other sports lawns		2500	5800 Maintenance		8 Hand and body		580 Field crops	50		
Hops		1400	12500 Inspection, irrigation		2 Hand and body	no TC available for this assessment	Hops	10		
Leaf vegetables and fresh herbs		2500	5800 Reaching, picking		8 Hand and body		580 Field crops	50		
Legume vegetables		2500	5800 Reaching, picking		8 Hand and body		580 Field crops	50		
Oilfruits		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Fruit crops	10		
Oilseeds		1400	12500 Inspection, irrigation		2 Hand and body	no TC available for this assessment	Field crops	50		
Ornamentals		5000	14000 Cutting, sorting, bundling, carrying		8 Hand and body		1400 Field crops	10		
Pome fruit		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Fruit crops	10		
Root and tuber vegetables		1400	12500 Inspection, irrigation		2 Hand and body	no TC available for this assessment	Field crops	50		
Stone fruit		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Fruit crops	10		
Tree nuts		4500	22500 Searching, reaching, picking		8 Hand and body		2250 Fruit crops	10		

Resident Spray Drift					
These values are the 75th Percentiles for Residents (assuming average breathing rates for inhalation exposures)					
key_ResidSpray, ay_ResidSpray	Adults Dermal	Children Dermal	Adults Inhalation	Children Inhalation	
Downward spraying2-3		0,47	0,327	0,0001	0,00022
Downward spraying5		0,24	0,22	0,00009	0,00017
Downward spraying10		0,20	0,18	0,00009	0,00013
Upward spraying2-3	NA	NA	NA	NA	NA
Upward spraying5		5,63	1,689	0,0021	0,00164
Upward spraying10		5,63	1,689	0,0021	0,00164

Bystander Spray Drift					
These values are the 95th Percentiles for Bystanders (assuming high breathing rates for inhalation exposures)					
key_BySpray, ay_BySpray	Adults Dermal	Children Dermal	Adults Inhalation	Children Inhalation	
Downward spraying2-3		1,21	0,74	0,0005	0,0011
Downward spraying5		0,57	0,48	0,00048	0,0008
Downward spraying10		0,48	0,39	0,00051	0,00076
Upward spraying2-3	NA	NA	NA	NA	NA
Upward spraying5		12,9	3,87	0,0044	0,0035
Upward spraying10		12,9	3,87	0,0044	0,0035

Mean Spray Drift					
These values are the mean values (assuming average breathing rates for inhalation exposures)					
key_AvgSpray, ay_AvgSpray	Adults Dermal	Children Dermal	Adults Inhalation	Children Inhalation	
Downward spraying2-3		0,22	0,18	0,0001	0,0002
Downward spraying5		0,12	0,12	0,0001	0,0001
Downward spraying10		0,11	0,1	0,0001	0,0001
Upward spraying2-3	NA	NA	NA	NA	NA
Upward spraying5		3,68	1,11	0,0017	0,0013
Upward spraying10		3,68	1,11	0,0017	0,0013

Resident and bystander Surface Deposits Drift percentage			
Ground sediments in % of the application rate calculated on the basis of percentile values (drift data acc. Rautmann)			
key_ByCropType, ay_ByCropType	Bystander surface deposit (90th Percentile)	Resident surface deposit (77th Percentile)	mean
Field cropsnot relevant2-3	0,085	0,056	0,041
Field cropsnot relevant5	0,035	0,023	0,018
Field cropsnot relevant10	0,019	0,013	0,010
Fruit cropsnot relevant2-3	0,292	0,240	0,190
Fruit cropsnot relevant5	0,199	0,158	0,117
Fruit cropsnot relevant10	0,118	0,090	0,061
Fruit cropsearly (without leaves)2-3	0,292	0,240	0,190
Fruit cropsearly (without leaves)5	0,199	0,158	0,117

Fruit cropsearly (without leaves)10	0,118	0,090	0,061
Fruit cropslate (dense foliage)2-3	0,157	0,110	0,070
Fruit cropslate (dense foliage)5	0,084	0,060	0,037
Fruit cropslate (dense foliage)10	0,036	0,027	0,016
Grapesnot relevant2-3	0,080	0,069	0,053
Grapesnot relevant5	0,036	0,031	0,023
Grapesnot relevant10	0,012	0,010	0,008
Hopsnot relevant2-3	0,193	0,159	0,100
Hopsnot relevant5	0,116	0,086	0,059
Hopsnot relevant10	0,058	0,037	0,029

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Match Method	Outdoor/Indoor	Formulation type	Application method	Application equipment	Type of exposure	Mixing & Loading 75th percentile	Mixing & Loading 95th percentile	Mixing & Loading Comments	Mixing & Loading Model	Application 75th percentile	Application 95th percentile	Application Comments	Application Model
IndoorGranules, fine granulesApplication of granulesManualBody	Indoor	Granules, fine granules	Application of granules	Manual	Body			Value for application is for combination of mixing&loading and application	PHED	68,8708	253,4438	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
IndoorGranules, fine granulesApplication of granulesManualHands	Indoor	Granules, fine granules	Application of granules	Manual	Hands			Value for application is for combination of mixing&loading and application	PHED	26,5320	94,3636	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
IndoorGranules, fine granulesApplication of granulesManualInhalation	Indoor	Granules, fine granules	Application of granules	Manual	Inhalation			Value for application is for combination of mixing&loading and application	PHED	0,4677	1,5251	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesBroadcast application of granulesVehicle-mountedBody	Outdoor	Granules, fine granules	Broadcast application of granules	Vehicle-mounted	Body	0,0162	0,0427	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED	0,0047	0,0151	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesBroadcast application of granulesVehicle-mountedHands	Outdoor	Granules, fine granules	Broadcast application of granules	Vehicle-mounted	Hands	0,0015	0,0069	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED	0,0004	0,0018	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesBroadcast application of granulesVehicle-mountedInhalation	Outdoor	Granules, fine granules	Broadcast application of granules	Vehicle-mounted	Inhalation	0,0208	0,0784		PHED	0,0012	0,0045		PHED
OutdoorGranules, fine granulesIn furrow application of granulesVehicle-mountedBody	Outdoor	Granules, fine granules	In furrow application of granules	Vehicle-mounted	Body	0,0162	0,0427	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED	0,0047	0,0151	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesIn furrow application of granulesVehicle-mountedHands	Outdoor	Granules, fine granules	In furrow application of granules	Vehicle-mounted	Hands	0,0015	0,0069	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED	0,0004	0,0018	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesIn furrow application of granulesVehicle-mountedInhalation	Outdoor	Granules, fine granules	In furrow application of granules	Vehicle-mounted	Inhalation	0,0208	0,0784		PHED	0,0012	0,0045		PHED
OutdoorGranules, fine granulesManual application of granulesManualBody	Outdoor	Granules, fine granules	Manual application of granules	Manual	Body			Value for application is for combination of mixing&loading and application	PHED	68,8708	253,4438	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesManual application of granulesManualHands	Outdoor	Granules, fine granules	Manual application of granules	Manual	Hands			Value for application is for combination of mixing&loading and application	PHED	26,5320	94,3636	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED
OutdoorGranules, fine granulesManual application of granulesManualInhalation	Outdoor	Granules, fine granules	Manual application of granules	Manual	Inhalation			Value for application is for combination of mixing&loading and application	PHED	0,4677	1,5251	Exposure value originally included use of PPE, calculated potential exposure is 100 times higher assuming a 'worst case' reduction factor of 1% for gloves/coverall	PHED

