FINAL REGISTRATION REPORT

Part B

Section 6

Mammalian Toxicology

Detailed summary of the risk assessment

Product code: JME-HER 12 OD

Product name(s): -

Chemical active substance:

iodosulfuron-methyl-sodium, 2 g/L

mesosulfuron-methyl, 10 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Applicant: Pestila Sp. z o.o.

Submission date: December 2023, revision: April 2024

MS Finalisation date: 03/10/2024

Version history

When	What
January 2024	Dossier sent for evaluation
04.2024	Update of dRR on evaluator's request
July 2024	zRMS finalised evaluation
October 2024	Final version prepared by zRMS after Commenting period

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zRMS comments:
The text highlighted in grey was provided by the evaluator.

6 Mammalian Toxicology (KCP 7)

Introduction

This is the application for registration of a plant protection product under working name JME-HER 12 OD according to Article 33 and Article 34 of Regulation 1107/2009. JME-HER 12 OD is an oil dispersion formulation, containing 2 g/L of iodosulfuron-methyl-sodium and 10 g/L of mesosulfuron-methyl, to be used as herbicide to protect cereals.

In respect to the above and taking into account Polish requirements for the applications for registration of a plant protection products according to Article 33 based on Article 34 of Regulation 1107/2009 applicant do not provide toxicology data and apply for using unprotected data of Atlantis 12 OD.

The classification of the JME-HER 12 OD based on data on hazardous substances calculation method under the guidance of Regulation 1272/2008/EC (CLP) as amended, is summarized below and details can be found in the confidential dRR Part C.

This document has been prepared by copying the risk assessments and summary of studies included in the Atlantis 12 OD renewal Registration Report (zRMS: Poland, MS finalisation: 12/02019). The information and studies used in this document are not protected in accordance with Art. 59 Reg. 1107/2009 and can be used for purpose of JME-HER 12 OD registration.

6.1 Summary

Table 6.1-1: Information on JME-HER 12 OD

Product name and code	JME-HER 12 OD
Formulation type	OD
Active substance	iodosulfuron-methyl-sodium, 2 g/L mesosulfuron-methyl, 10 g/L mefenpyr-diethyl (safener), 30 g/L
Function	herbicide

Information on the detailed composition of JME-HER 12 OD can be found in the confidential dRR Part C.

Justified proposals for classification and labelling

As stated above the classification of the JME-HER 12 OD is based on the calculation methods in accordance with the principles of Regulation 1272/2008 and the classification of Atlantis 12 OD and is included in Part C. According to the criteria given in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008, the following classification and labelling with regard to toxicological data is proposed for the preparation:

Table 6.1-2: Justified proposals for classification and labelling for JME-HER 12 OD according to Regulation (EC) No 1272/2008

Hazard class(es), categories:	Eye Irrit. 2, H319
Hazard pictograms or Code(s) for hazard pictogram(s):	 **GHS07**
Signal word:	Warning
Hazard statement(s):	H319 – Causes serious eye irritation.
Precautionary statement(s):	P264 - Wash hands thoroughly after handling P280 - Wear protective gloves, protective clothing, eye protection, face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice and attention.
Additional labelling phrases:	EUH401 - To avoid risks to human health and the environment, comply with the instructions for use.
	EUH208 - Contains fatty alcohol ethoxylate - alkyl ether. May produce an allergic reaction. EUH066 - Repeated exposure may cause skin dryness or cracking.

Table 6.1-3: Summary of risk assessment for operators, workers, residents and bystanders for JME-HER 12 OD

	Result	PPE / Risk mitigation measures
Operators	Acceptable	Work wear (arms, body and legs covered) and gloves during mixing/loading ~~and application~~.
Workers	Acceptable	None. Recommended: Work wear (arms, body and legs covered) and gloves during field actvities.
Residents	Acceptable	None.
Bystanders	Acceptable	

No unacceptable risk for operators, workers, residents and bystanders was identified when the product is used as intended and provided that the PPE/ risk mitigation measures stated in Table 6.1-2 are applied.

A summary of the critical uses and the overall conclusion regarding exposure for operators, workers and residents/bystanders is presented in the following table.

Table 6.1-4 Critical uses and overall conclusion of exposure assessment

1	2	3	4	5	6	7	8	9	10			
Use-No.*	**Crops and situation (e.g. growth stage of crop)**	**F, Fn, Fpn G, Gn, Gpn or I ****	**Application**		**Application rate**		**PHI (d)**	**Remarks:** **(e.g. safener/synergist (L/ha))** **critical gap for operator, worker, resident or bystander exposure based on [Exposure model]**	**Acceptability of exposure assessment**			
			Method / Kind **(incl. application technique *****)	**Max. number (min. interval between applications)** **a) per use** **b) per crop/ season**	**Max. application rate kg as/ha** **a) iodosulfuron-methyl-sodium** **b) mesosulfuron-methyl**	**Water L/ha** **min / max**			**Operator**	**Worker**	**Residents**	**Bystander**
1	Cereals Wheat, triticale BBCH 21-31	F	Spraying, LCTM	a) 1 b) 1	a) 0.0024 b) 0.012	200-300	NR	Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment for plant protection products EFSA Journal 2022;20(1):7032	R	A	A	A

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application
*** e.g. LC: low crops, HC: high crop, TM: tractor-mounted, HH: hand-held

Explanation for column 10 “Acceptability of exposure assessment”

A	Exposure acceptable without PPE / risk mitigation measures
R	Further refinement and/or risk mitigation measures required
N	Exposure not acceptable/ Evaluation not possible

6.2 Toxicological Information on Active Substance(s)

Information regarding classification of the active substances and on EU endpoints and critical areas of concern identified during the EU review are given in Table 6.2-1.

Table 6.2-1: Information on active substances

	Iodosulfuron-methyl-sodium	**Mesosulfuron-methyl**
Common Name	iodosulfuron-methyl-sodium	mesosulfuron-methyl
CAS-No.	144550-36-7	208465-21-8
Classification and proposed labelling		
With regard to toxicological endpoints (according to the criteria in Reg. 1272/2008, as amended)	Hazard classes (s), categories:none Code(s) for hazard pictogram(s):none Signal word:none Hazard statement(s):none Precautionary statement(s):none	Hazard classes (s), categories: none Code(s) for hazard pictogram(s): none Signal word: none Hazard statement(s): none Precautionary statement(s): none
Additional C&L proposal	None	None
Agreed EU endpoints		
AOEL systemic	0.05 mg/kg bw/d (corrected for 70% oral absorption)	0.13 mg/kg bw/d (corrected for 2% oral absorption)
Reference	EFSA Journal 2016;14(4):4453	EFSA Journal 2016;14(10):4584
Conditions to take into account/critical areas of concern with regard to toxicology		
Review Report/EFSA Conclusion for active substance	None	None

6.3 Toxicological Evaluation of Plant Protection Product

A summary of the toxicological evaluation for JME-HER 12 OD is given in the following tables. Full summaries of calculations on the product that have not been previously considered within an EU peer review process are described in detail in Part C.

~~Information concerning toxicological evaluation of formulation is included in RR for the reference product Atlantis 12 OD. Please refer to Renewal RR prepared for Atlantis 12 OD. No further data are required.~~

Table 6.3-1: Summary of acute toxicity calculations including skin irritation and skin sensitization for JME-HER 12 OD

Type of test, species, model system (Guideline)	Result	Acceptability	Classification (acc. to the criteria in Reg. 1272/2008)	Reference
Oral acute toxicity	Estimation based on composition of the product (additivity formula)	Yes	None.	dRR Part C
Dermal acute toxicity	Estimation based on composition of the product (additivity formula)	Yes	None.	dRR Part C
Inhalation acute toxicity	Estimation based on composition of the product (additivity formula)	Yes	None.	dRR Part C
Skin irritation	Estimation based on composition of the product (additivity formula)	Yes	None.	dRR Part C
Eye irritation *Acute eye irritation* *Rabbit (Female)* *xxx. (2004)* *M-227104-01-1*	Estimation based on composition of the product (additivity formula)	Yes	Eye Dam. 1, H318*	dRR Part C
	Irritating	Yes	*Eye Irrit.2/ H319- Causes serious eye irritation* Atlantis 12 OD (authorization no. R-98/2009)	Appendix 2
Skin sensitization *Buehler Skin sensitization* *Guinea pig (Female)* *xxx. (2004)* *M-227212-02-1*	Estimation based on composition of the product (additivity formula)	Yes	Skin Sens. 1, H317*	dRR Part C
	Non sensitizing	Yes	*No classification* Atlantis 12 OD (authorisation no. R-98/2009)	Appendix 2
Supplementary studies for combinations of plant protection products	-		-	-

* The product JME-HER 12 OD is identical to Atlantis 12 OD (authorisation no. R-98/2009), which is classified as H319 only (regarding toxicology section). Based on the unprotected data for product Atlantis 12 OD and justifications provided in dRR Part C, product JME-HER 12 OD should also be classified as H319 only.

Table 6.3-2: Additional toxicological information relevant for classification/labelling of JME-HER 12 OD

	Substance (concentration in product, % w/w)	Classification of the substance (acc. to the criteria in Reg. 1272/2008)	Reference	Classification of product (acc. to the criteria in Reg. 1272/2008)
Toxicological properties of active substance(s) (relevant for classification of product)	NR	-	-	-
Toxicological properties of non-active substance(s) (relevant for classification of product)	Docusate sodium / Bis(2-ethylhexyl) sodium sulfosuccinate	Skin Irrit. 2, H315 Eye Dam. 1, H318	Regulation (EC) No. 1272/2008 MSDS	Eye Dam. 1, H318*
Toxicological properties of non-active substance(s) (relevant for classification of product)	Fatty alcohol ethoxylate alkyl ether	Skin Sens. 1, H317 Eye Dam. 1, H318	Regulation (EC) No. 1272/2008 MSDS	Skin Sens. 1, H317* Eye Dam. 1, H318*
Further toxicological information	No data – not required			

* The product JME-HER 12 OD is identical to Atlantis 12 OD (authorisation no. R-98/2009), which is classified as H319 only (regarding toxicology section). Based on the unprotected data for product Atlantis 12 OD and justifications provided in dRR Part C, product JME-HER 12 OD should also be classified as H319 only.

Information concerning classification is provided in Part C.

6.4 Toxicological Evaluation of Groundwater Metabolites

zRMS's comment	Data on the below metabolites with the potential to reach the groundwater in concentrations above 0.1 µg/L have been already reviewed during the EU peer review process. Data has been accepted based on EU peer review. zRMS comments on the toxicological evaluation of each groundwater metabolite are included in Part B.10.

~~Information concerning toxicological evaluation of groundwater metabolites is included in RR for the reference product Atlantis 12 OD. Please refer to Renewal RR prepared for Atlantis 12 OD. No further data are required.~~

The following data on metabolites with the potential to reach the groundwater in concentrations above 0.1 µg/L and requiring relevance assessment were submitted. Note that the relevance assessment of the metabolites is reported in Part B.10; the submitted toxicological studies are summarized in this document.

6.4.1 Metabolite 1 - AE F160460, metabolite of mesosulfuron-methyl

An overview of the results of the accepted toxicological studies for groundwater metabolite AE F160460 is given in the following table.

Table 6.4-1: Summary of the results of toxicity studies for AE F160460

Type of test, species (Guideline)	***Result***	***Acceptability***	***Reference****
Ames Test on SalmonellaTyphimurium	*Negative*	*yes*	*Sokolowski A., 2012b KCA 5.8.1 /04*
Chromosomal aberrations in Chinese Hamster V79 cells	*Negative*	*yes*	*xxx2012 KCA 5.8.1 /05*
Gene mutation (HPRT)in Chinese Hamster V79 cells	*Negative*	*yes*	*xxx., 2015 KCA 5.8.1 /06*

* *indicates that a study was reviewed at EU level*

6.4.2 Metabolite 2 - AE F147447, metabolite of mesosulfuron-methyl

An overview of the results of the accepted toxicological studies for groundwater metabolite AE F147447 is given in the following table.

Table 6.4-2: Summary of the results of toxicity studies for AE F147447

Type of test, species (Guideline)	***Result***	***Acceptability***	***Reference****
Ames Test on SalmonellaTyphimurium	*Negative*	*yes*	*Sokolowski A., 2012 KCA 5.8.1 /01*
Chromosomal aberrations in Chinese Hamster V79 cells	*Negative*	*yes*	*xxxx.; 2015 KCA 5.8.1 /02*
Gene mutation (HPRT) in Chinese Hamster V79 cells	*Negative*	*yes*	*xxxx., 2012 KCA 5.8.1 /03*

* *indicates that a study was reviewed at EU level*

6.4.3 Metabolite 3 - BCS-CV14885, metabolite of mesosulfuron-methyl

An overview of the results of the accepted toxicological studies for groundwater metabolite BCS-CV14885 is given in the following table.

Table 6.4-2: Summary of the results of toxicity studies for BCS-CV14885

Type of test, species (Guideline)	***Result***	***Acceptability***	***Reference****
Salmonella typhimurium reverse mutation assay with (OECD 471)	*Negative*	*yes*	*Sokolowski A., 2013 KCA 5.8.1 /07*
In vitro chromosome aberration test in Chinese hamster V79 cells (OECD 473)	*Negative*	*yes*	*xxx 2015b KCA 5.8.1 /08*
Gene mutation assay in Chinese hamster V79 cells in vitro (V79/HPRT)	*Negative*	*yes*	*xxx., 2015b KCA 5.8.1 /09*

* *indicates that a study was reviewed at EU level*

6.5 Dermal Absorption (KCP 7.3)

A summary of the dermal absorption values for the active substances in product JME-HER 12 OD according to Guidance on Dermal Absorption (EFSA Journal 2017;15(6):4873 and SANTE/2018/10591 rev.1 of 24 October 2018) are presented in the following tables.

Table 6.5-1: Dermal absorption rates for iodosulfuron-methyl-sodium

iodosulfuron-methyl-sodium			**Acceptability of justification**
	Value	**Reference**	
Concentrate	70%	Guidance on dermal absorption (EFSA Journal 2017;15(6):4873) and SANTE/2018/10591 rev.1 of 24 October 2018 - default values for organic solvent-based[(a)] or other[(b)] formulations. Concentration < 50 g/L.	Yes
Dilution	70%		Yes

(a): Formulation types: emulsifiable concentrate (EC), emulsion, oil in water (EW), suspo-emulsion (SE), dispersible concentrate (DC), oil miscible liquids (OL/OF), oil-based suspension concentrates (OD), emulsion for seed treatment (ES), microemulsion (ME).

(b): Formulation types: bait concentrate (CB), capsule suspension (CS), gel for direct application (GEL/GD), bait, ready for use (RB), mixture of capsule suspension and suspension concentrate (ZC), seed coated with a pesticide (PS), experimental solution of active substances in solvent (AI).

Table 6.5-2: Dermal absorption rates for mesosulfuron-methyl

mesosulfuron-methyl			**Acceptability of justification**
	Value	**Reference**	
Concentrate	70%	Guidance on dermal absorption (EFSA Journal 2017;15(6):4873) and SANTE/2018/10591 rev.1 of 24 October 2018 - default values for organic solvent-based[(a)] or other[(b)] formulations. Concentration < 50 g/L.	Yes
Dilution	70%		Yes

(a): Formulation types: emulsifiable concentrate (EC), emulsion, oil in water (EW), suspo-emulsion (SE), dispersible concentrate (DC), oil miscible liquids (OL/OF), oil-based suspension concentrates (OD), emulsion for seed treatment (ES), microemulsion (ME).

(b): Formulation types: bait concentrate (CB), capsule suspension (CS), gel for direct application (GEL/GD), bait, ready for use (RB), mixture of capsule suspension and suspension concentrate (ZC), seed coated with a pesticide (PS), experimental solution of active substances in solvent (AI).

6.6 Exposure Assessment of Plant Protection Product (KCP 7.2)

Table 6.6-1: Product information and toxicological reference values used for exposure assessment

Product name and code	JME-HER 12 OD	
Formulation type	OD	
Category	herbicide	
Active substance (incl. content)	iodosulfuron-methyl-sodium, 2 g/L	mesosulfuron-methyl, 10 g/L
AOEL systemic	0.05 mg/kg bw/d (corrected for 70% oral absorption) (EFSA Journal 2016;14(4):4453)	0.13 mg/kg bw/d (corrected for 2% oral absorption) (EFSA Journal 2016;14(10):4584)
Inhalation absorption	100%	100%
Oral absorption	70%	2%
Dermal absorption	Concentrate: 70% Dilution: 70% Default values	Concentrate: 70% Dilution: 70% Default values

6.6.1 Selection of critical uses and justification

The critical uses selected for the exposure assessment of the plant protection product JME-HER 12 OD are bolded in GAP Table 6.1-3.

Justification

The critical uses were selected taking into account the maximum application rate, type of application equipment as well as area of use.

6.6.2 Operator exposure (KCP 7.2.1)

zRMS's comment	Acceptable. The Applicant performed operator exposure calculations using the EFSA OPEX calculator version 1.0.1 in accordance with the EFSA guidance (2022). Calculation results showed that operator exposure is acceptable (49.8% of the AOEL for iodosulfuron-methyl-sodium and 54.1% of the AOEL for mesosulfuron-methyl) if the product is used as intended (vehicle mounted, downward spraying, cereals) and the operator is wearing a workwear. However, combined exposure calculations revealed that the product JME-HER 12 OD containing two active substances can only be used safely if operator wears protective gloves during the mixing/loading step.

6.6.2.1 Estimation of operator exposure

A summary of the exposure models used for estimation of operator exposure to the active substances during application of JME-HER 12 OD according to the critical use is presented in Table 6.6-2. The outcome of the estimation is presented in Table 6.6-3. Detailed calculations are in Appendix 3.

Table 6.6-2: Exposure models for intended uses

Critical use	Cereals (max. 1.2 L product/ha)
Models	**AOEM EFSA model** (Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment for plant protection products; EFSA Journal 2022;20(1):7032) OPEX version: 1.0.1

Table 6.6-3: Estimated operator exposure

		Iodosulfuron-methyl-sodium		**Mesosulfuron-methyl**	
Model data	**Level of PPE**	**Total absorbed dose (mg/kg/day)**	**% of systemic AOEL**	**Total absorbed dose (mg/kg/day)**	**% of systemic AOEL**
Cereals Outdoor Area: 50 ha/day Downward spraying Vehicle mounted					
Application rate		1x 0.0024 kg a.s./ha		1x 0.012 kg a.s./ha	
Spray application (AOEM**;** **7**5th percentile) Body weight: 60 kg *OPEX version: 1.0.1*	Potential exposure	0.03	67.4	0.1	76.6
	M/L: Workwear App: Workwear	0.02	49.8	0.07	54.1
	M/L: Workwear + Protected hands App: Workwear	$6.02e^{-4}$	1.5	0.002	2

Conclusion

According to the model calculations, it can be concluded that the risk for the operator using product JME-HER 12 OD according to the GAP table is acceptable if operator is equipped with work wear (arms, body and legs covered) ~~and gloves during mixing/loading and application~~.

6.6.2.2 Measurement of operator exposure

Since the operator exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) will not be exceeded, a study to provide measurements of operator exposure was not necessary and was therefore not performed.

6.6.3 Worker exposure (KCP 7.2.3)

zRMS's comment	Acceptable. The Applicant performed worker exposure calculations using the EFSA OPEX calculator version 1.0.1 in accordance with the EFSA guidance (2022). Calculation results (also for combined exposure) showed that potential worker exposure is acceptable (4.2% of the AOEL for iodosulfuron-methyl-sodium and 8.1% of the AOEL for mesosulfuron-methyl) during inspection/irrigation activities. The product JME-HER 12 OD contains compounds that may produce an allergic reaction, and repeated exposure may cause skin dryness or cracking (EUH208 and EUH066), therefore it is recommended to use workwear and gloves during field activities. As a standard rule, treated crops should not be re-entered before spray deposits on leaf surfaces have completely dried.

6.6.3.1 Estimation of worker exposure

Table 6.6-4 shows the exposure models used for estimation of worker exposure after entry into a previously treated area or handling a crop treated with JME-HER 12 OD according to the GAP table. Outcome of the estimation is presented in Table 6.6-5. Detailed calculations are in Appendix 3.

Table 6.6-4: Exposure models for intended uses

Critical use	Cereals (max. 1.2 L product/ha)
Models	**AOEM EFSA model** (Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment for plant protection products; EFSA Journal 2022;20(1):7032) OPEX version: 1.0.1

Table 6.6-5: Estimated worker exposure

		Iodosulfuron-methyl-sodium		**Mesosulfuron-methyl**	
Model data	**Level of PPE**	**Total absorbed dose (mg/kg bw/day)**	**% of systemic AOEL**	**Total absorbed dose (mg/kg bw/day)**	**% of systemic AOEL**
Cereals Outdoor Downward spraying Vehicle-mounted Inspection, irrigation Work rate: 2 hours/day DT50: 30 days DFR: 3 µg/cm^2/kg a.s./ha Interval between treatments: NA					
EFSA model AOEM					
Application rate		1x 0.0024 kg a.s./ha		1x 0.012 kg a.s./ha	
Body weight: 60 kg *OPEX version: 1.0.1*	Potential TC: 12500 cm^2/person/h	0.002	4.2	0.01	8.1
	Work wear (arms, body and legs covered) TC: 1400 cm^2/person/h	0.0002	0.5	0.001	0.9
	Work wear (arms, body and legs covered) and gloves TC: 1250 cm^2/person/h	0.0002	0.4	0.001	0.8

Conclusion

The results of the exposure calculations performed by AOEM EFSA models show that the use of JME-HER 12 OD according to the GAP Table, causes no health risk for the worker in case of potential exposure. However, it's recommended for worker to be equipped with work wear (arms, body and legs covered) and gloves during field activities.

As a standard rule, it should be mentioned on the label that treated crops should not be re-entered before spray deposits on leaf surfaces have completely dried.

6.6.3.2 Refinement of generic DFR value (KCP 7.2)

Not relevant.

6.6.3.3 Measurement of worker exposure

Since the worker exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) will not be exceeded under conditions of intended uses and considering above mention PPE, a study to provide measurements of worker exposure was not necessary and was therefore not performed.

6.6.4 Resident and bystander exposure (KCP 7.2.2)

zRMS's comment	Acceptable. The Applicant performed resident exposure calculations using the EFSA OPEX calculator version 1.0.1 in accordance with the EFSA guidance (2022). Calculation results (also for combined exposure) showed that resident exposure both for child and adult is acceptable (below the AOEL) considering all pathways of exposure – drift, vapour, deposit and re-entry. The AAOEL values for iodosulfuron-methyl-sodium and mesosulfuron-methyl are not specified, therefore it is assumed that the bystander exposure estimation is covered by the calculated resident exposure to both substances.

6.6.4.1 Estimation of resident and bystander exposure

The acute exposure assessment for bystanders covers the exposure that a resident could reasonably be expected to incur in a single day. Therefore, there is no need for a separate acute risk assessment for residents.

No bystander risk assessment is required for PPPs that do not have significant acute toxicity or the potential to exert toxic effects after a single exposure. Exposure in this case will be determined by average exposure over a longer duration, and higher exposures on one day will tend to be offset by lower exposures on other days. Therefore, exposure assessment for residents also covers bystander exposure.

Table 6.6-6 shows the exposure models used for estimation of resident and bystander exposure to the active substances. The outcome of the estimation is presented in Table 6.6-7. Detailed calculations are in Appendix 3.

Table 6.6-6: Exposure models for intended uses

Critical use	Cereals (max. 1.2 L product/ha)
Model	**AOEM EFSA model** (Guidance on the assessment of exposure of operators, workers, residents and bystanders in risk assessment for plant protection products; EFSA Journal 2022;20(1):7032) OPEX version: 1.0.1

Table 6.6-7: Estimated resident exposure (longer term exposure)

		Iodosulfuron-methyl-sodium		Mesosulfuron-methyl	
Model data		**Total absorbed dose (mg/kg bw/day)**	**% of systemic AOEL**	**Total absorbed dose (mg/kg bw/day)**	**% of systemic AOEL**
Cereals Outdoor Downward spraying Vehicle-mounted Buffer zone: 2-3(m) Drift reduction technology: not applicable DT_{50}: 30 days DFR: 3 µg/cm^2/kg a.s./ha Interval between treatments: NA					
Number of applications and application rate		1x 0.0024 kg a.s./ha		1x 0.012 kg a.s./ha	
Resident child Body weight: 10 kg *OPEX version: 1.0.1*	Drift (75th perc.)	0.0002	0.5	0.001	0.9
	Vapour (75th perc.)	0.0008	1.6	0.0008	0.6
	Deposits (75th perc.)	3e-05	0.05	0.0001	0.09
	Re-entry (75th perc.)	0.0003	0.6	0.001	1.1
	Sum (mean)	**0.001**	**2.3**	**0.003**	**2**
Resident adult Body weight: 60 kg *OPEX version: 1.0.1*	Drift (75th perc.)	5e-05	0.1	0.0003	0.2
	Vapour (75th perc.)	0.0003	0.5	0.0003	0.2
	Deposits (75th perc.)	1e-05	0.02	6e-05	0.04
	Re-entry (75th perc.)	0.0002	0.3	0.0008	0.6
	Sum (mean)	**0.0004**	**0.9**	**0.001**	**0.8**

Conclusion

The reference value acutely toxic active substance (RVAAS) for iodosulfuron-methyl-sodium and mesosulfuron-methyl is not allocated. Consequently, it is assumed that the estimation of bystander exposure is covered by the calculation of resident exposure towards this active substance.
All estimated values are below the AOEL values for active substances. It can be concluded that the exposure of bystander and resident (children and adult) to iodosulfuron-methyl-sodium and mesosulfulron-methyl contained in the formulation JME-HER 12 OD causes no risk to human health if the product is used in accordance with the intended uses listed in the GAP table.

6.6.4.2 Measurement of resident and/or bystander exposure

Since the bystander / resident exposure estimations carried out indicated that the acceptable operator exposure level (AOEL) for ~~dithianon~~ iodosulfuron-methyl-sodium and mesosulfuron-methyl will not be exceeded under conditions of intended uses, a study to provide measurements of bystander/resident exposure was not necessary and was therefore not performed.

6.6.5 Combined exposure

The product is a mixture of two active substances with the addition of safener.

Comments of zRMS:	The combined exposure calculations for operator, workers and residents conducted by the Applicant and presented in Table 6.6-11 are acceptable. The Hazard Index is <1, therefore combined exposure to both active substances (iodosulfuron-methyl-sodium and mesosulfuron-methyl in JME-HER 12 OD) is not expected to pose a risk for operators and workers and residents provided that operator is wearing protective gloves during the mixing/loading step. The exposure assessment of residents also covers the bystander exposure, therefore the combined exposure of bystanders is also not expected.

6.6.5.1 Exposure assessment of iodosulfron-methyl-sodium and mesosulfulron-methyl JME-HER 12 OD

Note: The combined toxicological effect of these active substances has not been investigated with regard to repeated dose toxicity.

At the first tier, combined exposure is calculated as the sum of the component exposures without regard to the mode of action or mechanism/target of toxicity. Initially, the individual Hazard Quotients (HQ) are calculated for all active substances in the PPP by assessing the exposure according to appropriate models and dividing the individual exposure levels by the respective systemic AOEL. This is equivalent to the predicted exposure as % of systemic AOEL from Table 6.6-3 converted to decimal. The Hazard Index (HI) is the sum of the individual HQs.

Table 6.6-8: Risk assessment from combined exposure (OPEX version: 1.0.1)

Iodosulfron-methyl-sodium + mesosulfulron-methyl		
Application scenario	**Hazard index**	
Operators - vehicle mounted *M/L: Workwear + Protected hands* *App: Workwear*	0.03	
Workers - inspection, irrigation *Work wear*	0.01	
Resident child Body weight: 10 kg	Drift (75th perc.)	0.01
	Vapour (75th perc.)	0.02
	Deposits (75th perc.)	0.001
	Re-entry (75th perc.)	0.02
	Sum (mean)	0.04
Resident adult Body weight: 60 kg	Drift (75th perc.)	0.003
	Vapour (75th perc.)	0.007
	Deposits (75th perc.)	0.0007
	Re-entry (75th perc.)	0.009
	Sum (mean)	0.02

The Hazard Index is < 1. Thus, combined exposure to iodosulfuron-methyl-sodium and mesosulfulron-methyl contained in the formulation JME-HER 12 OD is not expected to present a risk for operators, workers, residents and bystanders. No further refinement of the assessment is required.

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
-	-	-	-	-	-

List of unprotected data referred to by the applicant and relied on, but already evaluated

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 7.1.5 / 01	*xxx.*	*2004*	*Acute eye irritation/corrosion on rabbits - Atlantis liquid Mesosulfuron-methyl & iodosulfuron-methyl-sodium & mefenpyr-diethyl, OD 10 + 2 + 30 Code: AE F115008 06 OD04 A1* *Report No.: C039670, Edition Number: M-227104-01-1* *xxxxxxxxxxxxxxxxxxxxxxxxxx* *GLP/GEP: Yes* *unpublished*	*Yes*	*Bayer*
KCP 7.1.6 / 01	*xxx.*	*2004*	*Study for the skin sensitization effect in guinea pigs (Buehler patch test) Code: AE F115008 06 OD04 A104* *Report No.: C039780, Edition Number: M-227212-02-1* *xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx* *... amended: 2004-03-18*	*Yes*	*Bayer*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
			GLP/GEP: Yes *unpublished*		

List of data submitted or referred to by the applicant and relied on, but already evaluated at EU peer review

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner

List of data submitted by the applicant and not relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner

List of data relied on not submitted by the applicant but necessary for evaluation

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner

Appendix 2 Detailed evaluation of the studies relied upon

Not relevant. No new studies provided.

A 2.1 Statement on bridging possibilities

Not relevant.

A 2.2 Acute oral toxicity (KCP 7.1.1)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12 OD formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, there is no need to classify JME-HER 12 OD in this hazard class.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation JME-HER 12 OD does not contain components classified for acute oral, dermal or inhalation toxicity. According to Regulation (EC) No. 1272/2008 no classification is required. For more details, please refer to dRR Part C.

A 2.3 Acute percutaneous (dermal) toxicity (KCP 7.1.2)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12 OD formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, there is no need to classify JME-HER 12 OD in this hazard class.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation JME-HER 12 OD does not contain components classified for acute oral, dermal or inhalation toxicity. According to Regulation (EC) No. 1272/2008 no classification is required. For more details, please refer to dRR Part C.

A 2.4 Acute inhalation toxicity (KCP 7.1.3)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12 OD formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, there is no need to classify JME-HER 12 OD in this hazard class.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation JME-HER 12 OD does not contain components classified for acute oral, dermal or inhalation toxicity. According to Regulation (EC) No. 1272/2008 no classification is required. For more details, please refer to dRR Part C.

A 2.5 Skin irritation (KCP 7.1.4)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12 OD formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, there is no need to classify JME-HER 12 OD in this hazard class.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation JME-HER 12 OD contains one co-formulant classified as Skin Irrit. 2, H315 at a concentration below the trigger value of 10%. According to Regulation (EC) No. 1272/2008 no classification is required. For more details, please refer to dRR Part C.

A 2.6 Eye irritation (KCP 7.1.5)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12O D formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, the JME-HER 12 OD formulation should be classified as Eye Dam. 1, H318. However, JME should be classified as Eye Irrit. 2, H319.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation JME-HER 12 OD contains two co-formulant classified as Eye Dam. 1, H318 at total concentration of above the trigger value of 3%. According to Regulation (EC) No. 1272/2008 the product is classified as Eye Dam. 1, H318. For more details, please refer to dRR Part C.

However, the formulation JME-HER 12 OD has the same composition as the reference product Atlantis 12 OD of Bayer AG, for which a 10-year data protection period has expired and unprotected data can be used for classification. For Atlantis 12 OD an eye irritation study (rabbit) was performed, which resulted in eye irritation and the product was classifies as Eye Irrit. 2, H319. Based on study results performed for the reference product Atlantis 12 OD, product JME-HER 12 OD should be classified as Eye Irrit. 2, H319.

Reference:	***KCP 7.1.5/01***
Title:	*Acute eye irritation/corrosion on rabbits - Atlantis liquid Mesosulfuron-methyl & iodosulfuron-methyl-sodium & mefenpyr-diethyl, OD 10 + 2 + 30 Code: AE F115008 06 OD04 A1*
Report:	*xxxxxxxxxxxxxx.; 2004; C039670; M-227104-01-1*
Authority registration No:	
Guideline(s):	*EU (=EEC): 67/548/EEC, Part B, B.5; OECD: 405*
Deviations:	*--*
GLP/GEP:	*yes*
Acceptability:	
Duplication (if vertebrate study):	*No*

Material and Methods

The formulation Mesosulfuron-methyl & Iodosulfuron-methyl-sodium & Mefenpyr-diethyl OD 10 + 2 + 30 (batch number: AAIM01428) contained 10.44 g/L (measured: 10.63 g/L) of the active ingredient Mesosulfuron-methyl, 2 g/L (measured: 2.11 g/L) of the active ingredient Iodosulfuron-methyl-sodium, and 30 g/L (measured: 30.59 g/L) of the active ingredient Mefenpyr-diethyl.

The test was started with one of three rabbits. 100 µL of the pure liquid test substance was placed into the conjunctival sac of one eye of the first animal after having gently pulled the lower lid away from the eyeball. The lids were gently held together for about one second in order to prevent loss of the test compound. The other eye, which remains untreated, served as control. The eyes were not washed for at least 24 hours following instillation.

As no corrosive/irritating effect was observed after one hour the other two rabbits were treated.

The individual findings of the treated eyes at the various observation times are summarized in

Table 7.1.5-1: Summary of irritant effect

Observations Animal 2589	*1h*	*24h*	*48h*	*72h*	*Mean scores (24-48-72h)*	*Reversible (days)*
Degree of cornea opacity	*1*	*2*	*2*	*2*	*2.00 (+)*	*21*
Iris	*1*	*1*	*1*	*0*	*0.67 (-)*	*-*
Redness conjunctivae	*1*	*1*	*1*	*1*	*1.00 (-)*	*-*
Chemosis conjunctivae	*1*	*1*	*1*	*1*	*1.00 (-)*	*-*

Observations Animal 2597	*1h*	*24h*	*48h*	*72h*	*Mean scores (24-48-72h)*	*Reversible (days)*
Degree of cornea opacity	*1*	*2*	*2*	*2*	*2.0 (+)*	*21*
Iris	*1*	*1*	*1*	*1*	*1.0 (+)*	*5*
Redness conjunctivae	*1*	*1*	*1*	*1*	*1.0 (-)*	*-*
Chemosis conjunctivae	*1*	*2*	*2*	*2*	*2.0 (+)*	*6*

Observations Animal 2600	*1h*	*24h*	*48h*	*72h*	*Mean scores (24-48-72h)*	*Reversible (days)*
Degree of cornea opacity	*1*	*2*	*2*	*2*	*2.0 (+)*	*21*
Iris	*1*	*0*	*1*	*1*	*0.67 (-)*	*-*

Redness conjunctivae	*1*	*2*	*2*	*1*	*2.0 (-)*	*-*
Chemosis conjunctivae	*1*	*2*	*3*	*2*	*2.67 (+)*	*6*

Response: corneal opacity: mean scores <2 = (-), ≥2<3 = (+), ≥3 = (++)

Iritis: mean scores <1 = (-), ≥1<2 = (+), = 2 =(++)

Conjunctival redness: mean scores <2.5 = (-), ≥2.5 = +

Conjunctival oedema: mean scores <2 = (-), ≥ 2 = +

Additional The individual findings of the treated eyes at the various observation times are summarized in Table 7.1.1; 7.1.3

Table 7.1.1 Irritant Effects on the Eye – Animal (1) No. 2589, Body Weight 2532 g

Observation	1 h	24 h	48 h	72 h	day 4	day 5	day 6	day 7	day 14	day 21	Index
Degree of Cornea opacity	1	2	2	2	2	2	2	2	1	0	2.00
Area of Cornea opacity	4	4	4	4	4	4	4	4	2	0	4.00
Fluorescein- Degree	-	2	2	2	2	2	2	2	1	0	2.00
Coloration Area	-	4	4	4	4	4	4	4	2	0	4.00
Iris	1	1	1	0	1	0	0	0	0	0	0.67
Aqueous humor opacity	0	*	*	*	*	*	0	0	0	0	*
Redness Conjunctivae	1	1	1	1	1	0	0	0	0	0	1.00
Chemosis Conjunctivae	1	1	1	1	1	1	0	0	0	0	1.00
Lacrimation	1	1	1	0	1	0	0	0	0	0	0.67

Abbreviations:
g: gram h: hour(s) * : grading not possible

Table 7.1.2 Irritant Effects on the Eye – Animal (2) No. 2597, Body Weight 2603 g

Observation	1 h	24 h	48 h	72 h	day 4	day 5	day 6	day 7	day 14	day 21	Index
Degree of Cornea opacity	1	2	2	2	2	2	1	1	1	0	2.00
Area of Cornea opacity	4	4	4	4	4	4	4	4	2	0	4.00
Fluorescein- Degree	-	2	2	2	2	2	1	1	1	0	2.00
Coloration Area	-	4	4	4	4	4	4	4	2	0	4.00
Iris	1	1	1	1	1	0	0	0	0	0	1.00
Aqueous humor opacity	0	0	0	0	0	0	0	0	0	0	0
Redness Conjunctivae	1	1	1	1	1	0	0	0	0	0	1.00
Chemosis Conjunctivae	1	2	2	2	1	1	0	0	0	0	2.00
Lacrimation	1	1	2	0	0	0	0	0	0	0	1.00

Abbreviations:
g: gram h: hour(s)

Table 7.1.3 Irritant Effects on the Eye – Animal (3) No. 2600, Body Weight 2453 g

Observation	1 h	24 h	48 h	72 h	day 4	day 5	day 6	day 7	day 14	Day 21	Index
Degree of Cornea opacity	1	2	2	2	2	2	2	2	2	0**	2.00
Area of Cornea opacity	4	4	4	4	4	4	4	4	4	0	4.00
Fluorescein- Degree	-	2	2	2	2	2	2	2	2	0	2.00
Coloration Area	-	4	4	4	4	4	4	4	4	0	4.00
Iris	1	0	1	1	1	1	1	1	0	0	0.67
Aqueous humor opacity	0	*	*	*	*	*	0	0	0	0	*
Redness Conjunctivae	1	2	2	2	1	0	0	0	0	0	2.00
Chemosis Conjunctivae	1	2	3	3	2	1	0	0	0	0	2.67
Lacrimation	0	1	1	0	0	0	0	0	0	0	0.67

Abbreviations:
g: gram h: hour(s) * : grading not possible ** : ingrowing vessels (reparation)

Findings

The mean scores calculated using the two most sensitive animals 24, 48 and 72 hours were 2.33 for chemosis, 1.5 for redness of the conjunctiva, 0.83 for iris lesions and 2.0 for corneal opacity.

Mesosulfuron-methyl & Iodosulfuron-methyl-sodium & Mefenpyr-diethyl OD

10+2+30 is moderately irritating to the eye with full reversibility within 21 days.

Conclusion

The test item, the iodosulfuron-methyl-sodium + mesosulfuron-methyl +mefenpyr-diethyl OD 42 (2+10+30 g/L) formulation, was moderately irritant when administered by the ocular route to rabbits with full reversibility within 21 days.

According to the criteria given in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008, the following classification and labelling with regard to toxicological data is not classified H319/Eye Irrit.2.

A 2.7 Skin sensitisation (KCP 7.1.6)

Comments of Evaluator:	Acceptable. The toxicological assessment of the JME-HER 12 OD formulation was carried out using the calculation method in accordance with CLP. According to the calculation results, the JME-HER 12 OD formulation should be classified as Skin Sens. 1, H317. However, taking into account the results of unprotected study for the similar product Atlantis 12 OD, JME-HER 12 OD should not be classified in this hazard class.

No studies submitted with this application. Classification based on composition of the formulation.

The formulation contains component classified as Skin Sens. 1, H317 at a concentration of above the trigger value of 1%. According to Regulation (EC) No. 1272/2008 the product is classified as Skin Sens. 1, H317. For more details, please refer to dRR Part C.

However, the product JME-HER 12 OD has the same composition as the reference product Atlantis 12 OD of Bayer AG, for which a 10-year data protection period has expired and unprotected data can be used for classification. For Atlantis 12 OD a skin sensitization study (guinea pigs) was performed, which resulted

not irritating to skin and then was not classified (RR for Atlantis 12 OD, Part B Section 6, Report No.: AT00991A). Based on study results performed for the reference product Atlantis 12 OD, no classification is required for product JME-HER 12 OD.

Reference:	***KCP 7.1.6/01***
Title:	*Study for the skin sensitization effect in guinea pigs (Buehler patch test) Code: AE F115008 06 OD04 A104*
Report:	*xxxxxxxxxxxxxx; 2004; C039780; M-227212-02-1*
Authority registration No:	
Guideline(s):	*EU (=EEC): EC 96/54, Method B.6; OECD: 406; USEPA (=EPA): OPPTS 870.2600*
Deviations:	*--*
GLP/GEP:	*yes*
Acceptability:	
Duplication (if vertebrate study):	*No*

Material and Methods

Mesosulfuron-methyl & Iodosulfuron-methyl-sodium & Mefenpyr-diethyl OD 10 + 2 + 30 (batch number: AAIM01428) contained 10.44 g/L (measured: 10.63 g/L) of the active ingredient Mesosulfuron-methyl, 2 g/L (measured: 2.11 g/L) of the active ingredient Iodosulfuron-methyl-sodium, and 30 g/L (measured: 30.59 g/L) of the active ingredient Mefenpyr-diethyl.

The test was performed on 30 female guinea pigs (20 animals for the test item group and 10 control animals). Two animals were used for dose-finding, where the test compound was formulated in physiological saline solution.

- Induction: the animals were dermally treated with the test item nine times over 3 weeks. The 1st to 9th inductions were performed with the 12% test item concentration. The volume applied per animal was 0.5 mL.

The 1st to 4th induction and the 8th and 9th induction was carried out on the left flank and the 5th to 7th on the right flank, because of the strong skin effects after the 4th and 7th inductions.

The occlusive patches were removed after an exposure period of 6 hours. The treatment areas were visually assessed 30 hours after initiation of exposure.

- Challenge: the challenge was performed four weeks after the first dermal induction. The backs and the flanks of the animals were shorn one day prior to challenge. A patch, loaded with 0.5 mL of the 6% test compound was applied and fixed to the right flank of the animals for an exposure period of 6 hours. The skin reactions were assessed 30 and 54 hours after the beginning of the challenge.

Findings

Table 7.1.2-1 Results of the proliferation assay:

Sex	Animal number	Control group			
		Test item patch		Control patch	
		30 hours*	54 hours*	30 hours*	54 hours*
Male	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

	5	0	0	0	0
	6	0	0	0	0
	7	0	0	0	0
	8	0	0	0	0
	9	0	0	0	0
	10	0	0	0	0
		Treated group			
Male	11	0	0	0	0
	12	+	+	+	+
	13	0	0	0	0
	14	0	0	0	0
	15	0	0	0	0
	16	0	0	0	0
	17	0	0	0	0
	18	0	0	0	0
	19	0	0	0	0
	20	0	0	0	0
	21	0	0	0	0
	22	0	0	0	0
	23	0	0	0	0
	24	+	+	+	+
	25	0	0	0	0
	26	0	0	0	0
	27	0	0	0	0
	28	0	0	0	0
	29	0	0	0	0
	30	0	0	0	0

*: finding made 30 and 54 hours after start of exposure,

+: animal died

-Mortality: Animal no 24 of the test item group died at day 10 of the study.

-Clinical signs: Animal no 12 of the test item group showed at day 13: laboured breathing, piloerection, pale and from day 14 to death at day 15: laboured breathing, piloerection, pale and apathy. Appearance and behaviour of other animals of the test item group were not different from the control group.

- Body weights: no difference was observed between the control group and the treated group.
- Dermal observations: no skin effects were recorded during the challenge phase with the 6%test item formulation.

Conclusion

The test item, the iodosulfuron-methyl-sodium + mesosulfuron-methyl +mefenpyr-diethyl OD 42 (2+10+30 g/L) formulation, was moderately irritant when administered by the ocular route to rabbits with full reversibility within 21 days.

According to the criteria given in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008, the following classification and labelling with regard to toxicological data is not classified.

A 2.8 Supplementary studies for combinations of plant protection products (KCP 7.1.7)

Not relevant. No supplementary studies were submitted.

A 2.9 Data on co-formulants (KCP 7.4)

A 2.9.1 Material safety data sheet for each co-formulant

Information regarding material safety data sheets of the co-formulants can be found in the confidential dossier of this submission (Registration Report - Part C).

A 2.9.2 Available toxicological data for each co-formulant

Available toxicological data for each co-formulant can be found in the confidential dossier of this submission (Registration Report - Part C).

A 2.10 Studies on dermal absorption (KCP 7.3)

Not relevant. No studies regarding dermal absorption were submitted.

Appendix 3 Exposure calculations

A 3.1 Operator exposure calculations (KCP 7.2.1)

AOEM EFSA model - OPEX version: 1.0.1

Information on product and active substance(s)

Product name	JME-HER 12 OD
Formulation type	Soluble concentrates, emulsifiable concentrate, etc.
Product category	Herbicide
Name of active substance	Iodosulfuron-methyl-sodium
Concentration of active substance [g a.s./l or kg]	2
AOEL [mg/kg bw/day]	0.05
Inhalation absorption [%]	100
Oral absorption [%]	70
Dermal absorption [%] (concentrate)	70
Name of active substance	Mesosulfuron-methyl
Concentration of active substance [g a.s./l or kg]	10
AOEL [mg/kg bw/day]	0.13
Inhalation absorption [%]	100
Oral absorption [%]	2
Dermal absorption [%] (concentrate)	70

Mixing/loading Application	Iodosulfuron-methyl-sodium (% AOEL) Normal & vehicle-mounted	Mesosulfuron-methyl (% AOEL) Normal & vehicle-mounted
	67.4	76.6
	49.8	54.1
	1.5	2

Model data	Level of PPE	Total absorbed dose [mg/kg bw per day]	% of systemic AOEL
Field crops/Outdoor/Downward spraying/Vehicle-mounted/Drift reduction: 0 %/75th percentile Crop density: Normal			
Iodosulfuron-methyl-sodium	Number of applications and application rate: 1 x 0.0024 kg a.s./ha Dermal absorption (concentrate): 70 % Dermal absorption (in-use dilution): 70 %		
	M/L: Workwear App: Workwear	0.02	49.8
Mesosulfuron-methyl	Number of applications and application rate: 1 x 0.012 kg a.s./ha Dermal absorption (concentrate): 70 % Dermal absorption (in-use dilution): 70 %		
	M/L: Workwear App: Workwear	0.07	54.1

A 3.2 Worker exposure calculations (KCP 7.2.3)

AOEM EFSA model - OPEX version: 1.0.1

Level of PPE	Total absorbed dose [mg/kg bw per day]	% of systemic AOEL	Re-entry restriction [days]
			Inspection, irrigation / Outdoor Work rate: 2 hours/day Interval: NA Body weight: 60 kg TC (potential): 12500 cm²/h TC (workwear (arms, body and legs covered)): 1400 cm²/h TC (workwear (arms, body and legs covered) and gloves): 1250 cm²/h TC (gloves): NA cm²/h
Iodosulfuron-methyl-sodium			Number of applications & application rate: 1 x 0.0024 kg a.s./ha Dermal absorption: 70 % DFR: 3 µg/cm² foliage per kg a.s./ha DT50: 30 days
Potential	0.002	4.2	0
Workwear	0.0002	0.5	0
Workwear and gloves	0.0002	0.4	0
Mesosulfuron-methyl			Number of applications & application rate: 1 x 0.012 kg a.s./ha Dermal absorption: 70 % DFR: 3 µg/cm² foliage per kg a.s./ha DT50: 30 days
Potential	0.01	8.1	0
Workwear	0.001	0.9	0
Workwear and gloves	0.001	0.8	0

A 3.3 Resident and bystander exposure calculations (KCP 7.2.2.1)

AOEM EFSA model - OPEX version: 1.0.1

Model data	Level of PPE	Total absorbed dose [mg/kg bw per day]	% of systemic AOEL
			Season: Not relevant Buffer zone: 2-3 m Drift reduction technology: 0 % Interval between treatments: NA Minimum volume of water: 200 l
Iodosulfuron-methyl-sodium			Number of applications and application rate: 1 x 0.0024 kg a.s./ha Dermal absorption: 70 % DFR: 3 µg/cm² foliage per kg a.s./ha DT50: 30 days
Resident child Body weight: 10 kg	Drift (75th perc.)	0.0002	0.5
	Vapour (75th perc.)	0.0008	1.6
	Deposits (75th perc.)	3e-05	0.05
	Re-entry (75th perc.)	0.0003	0.6
	Sum (mean)	0.001	2.3
Resident adult Body weight: 60 kg	Drift (75th perc.)	5e-05	0.1
	Vapour (75th perc.)	0.0003	0.5
	Deposits (75th perc.)	1e-05	0.02
	Re-entry (75th perc.)	0.0002	0.3
	Sum (mean)	0.0004	0.9
Mesosulfuron-methyl			Number of applications and application rate: 1 x 0.012 kg a.s./ha Dermal absorption: 70 % DFR: 3 µg/cm² foliage per kg a.s./ha DT50: 30 days
Resident child Body weight: 10 kg	Drift (75th perc.)	0.001	0.9
	Vapour (75th perc.)	0.0008	0.6
	Deposits (75th perc.)	0.0001	0.09
	Re-entry (75th perc.)	0.001	1.1
	Sum (mean)	0.003	2
Resident adult Body weight: 60 kg	Drift (75th perc.)	0.0003	0.2
	Vapour (75th perc.)	0.0003	0.2
	Deposits (75th perc.)	6e-05	0.04
	Re-entry (75th perc.)	0.0008	0.6
	Sum (mean)	0.001	0.8

A 3.4 Combined exposure calculations

AOEM EFSA model - OPEX version: 1.0.1

Operator

Combined exposure	Hazard index
M/L: Workwear + Protected hands App: Workwear	0.03

Worker

Combined	Hazard index
potential	0.1
Workwear	0.01
Workwear and gloves	0.01

Resident/bystander

Combined exposure		Hazard index
Resident child Body weight: 10 kg	Drift (75th perc.)	0.01
	Vapour (75th perc.)	0.02
	Deposits (75th perc.)	0.001
	Re-entry (75th perc.)	0.02
	Sum (mean)	0.04
Resident adult Body weight: 60 kg	Drift (75th perc.)	0.003
	Vapour (75th perc.)	0.007
	Deposits (75th perc.)	0.0007
	Re-entry (75th perc.)	0.009
	Sum (mean)	0.02

Appendix 4 Detailed evaluation of exposure and/or DFR studies relied upon (KCP 7.2, KCP 7.2.1.1, KCP 7.2.2.1, KCP 7.2.3.1)

Not relevant.