Draft Assessment Report

Evaluation of Active Substances

Plant Protection Products

Prepared according to **assimilated Regulation No 1107/2009**
as it applies in Great Britain

Inpyrfluxam

Volume 3 – B.2 (AS)

Physicaly & Chemical Properties

Great Britain

March 2026

Version History

When	What
November 2025	Initial DAR
March 2026	Updates made after ECP

Contents

B.2. Physical and Chemical Properties of the Active Substance

Test or Study Annex Point	Guideline and method	Test material purity and specification	Used Methods / Results	Comments (Acceptable / Non acceptable)	GLP	Reference
B.2.1. Melting Point and Boiling Point						
Melting, freezing or solidification point B.2.1/01	OECD Test Guideline 102 (Capillary tube method) EEC A.1. EPA/OCSPP Series 830.7200	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	The melting temperature of the test item was determined to be 104 °C.	Acceptable. Inpyrfluxam is a solid at room temperature with a melting point of 104 °C.	Y	Study Report Number: 41501169 TPP-0010 [redacted] (2016)
Boiling point B.2.1/02	OECD Guideline 103	Inpyrfluxam (S-2399 PAI)	The test item decomposed on heating from approximately 237 °C, therefore the boiling temperature could not be determined.	Acceptable.	Y	Study Report Number: 41501169

<table>
<tr><td></td><td>(Siwoloboff method)

EC A.2.

EPA/OCSPP 830.7220</td><td>Batch number: YT3424G

Purity: 99.9%</td><td></td><td>Inpyrfluxam decomposes above 237 °C.</td><td></td><td>TPP-0010

[redacted]
(2016)</td></tr>
<tr><td>Decomposition/ Sublimation temperature B.2.1/03</td><td>-</td><td>-</td><td>-</td><td>Acceptable.

See B.2.1/02 above.</td><td>-</td><td>-</td></tr>
<tr><td colspan="7"><h2>B.2.2. Vapour Pressure, Volatility</h2></td></tr>
<tr><td>Vapour pressure B.2.2/01</td><td>OECD Test Guideline 104

(Vapour pressure balance)

EC Method A.4

EPA/OCSPP 830.7950</td><td>Inpyrfluxam (S-2399 PAI)

Batch number: YT3424G

Purity: 99.9%</td><td>Calculated by extrapolation from the vapour pressure curve
<table><tr><th>Parameter</th><th>Value</th></tr><tr><td>Vapour pressure at 20 °C</td><td>3.81 x 10^{-8} Pa</td></tr><tr><td>Vapour pressure at 25 °C</td><td>1.20 x 10^{-7} Pa</td></tr></table></td><td>Acceptable.

Very slightly volatile at 20 °C and 25 °C.</td><td>Y</td><td>Study Report Number: 41304332

TPP-0003

[redacted]
(2014)</td></tr>
</table>

Volatility (Henry's Law constant) B.2.2/02	Calculation	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	Henry's Law Constant at 20 °C is 7.74 x 10^{-7} Pa m^3/mol	Acceptable. Calculated from vapour pressure and water solubility at 20 °C.	N	Study Report Number: 1403863.UK0-9888 TPP-0011 [redacted] (2016)
B.2.3. Appearance (Physical state, Colour)						
Physical state and colour B.2.3/01	EPA/OCSPP 830.6302 EPA/OCSPP 830.6303 (Visual inspection)	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	**Pure active ingredient:** *Colour:* Beige (10YR 9/2 R on the Munsell colour system) at 25 °C. *Physical state: S*olid at 25°C in granular form.	Acceptable.	Y	Study Report Number: 41304120 TPP-0006 [redacted] (2015)
Physical state and colour B.2.3/02	EPA/OCSPP 830.6302 EPA/OCSPP 830.6303 (Visual inspection)	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G	**Technical grade active ingredient:** *Colour:* White (N9.5/90% R on the Munsell colour system) at 20 °C. *Physical state: S*olid at 20°C in powder form.	Acceptable.	Y	Study Report Number: 41304529 TPP-0007

<table>
<tr><td></td><td></td><td>Purity: 95.0%</td><td></td><td></td><td></td><td>[redacted] (2015)</td></tr>
<tr><td colspan="7"><h2>B.2.4. Spectra (UV/VIS, IR, NMR, MS), Molar extinction at relevant wavelengths, Optical Purity</h2></td></tr>
<tr><td>Ultraviolet/visible (UV/VIS) B.2.4/01</td><td>OECD Test Guideline 101

EPA/OCSPP 830.7050

(Perkin Elmer Lambda 25 Ultraviolet/visible Spectrophotometer)</td><td>Inpyrfluxam (S-2399 PAI)

Batch number: YT3424G

Purity: 99.9%</td><td>Samples were prepared in methanol. In line with OECD Test Guideline 101, acidic and basic solutions were prepared by adding 0.1 M HCl and 0.1 M NaOH respectively.
<table>
<tr><th>Solution</th><th>Wavelength (nm)</th><th>Molar Extinction Coefficient (dm^3 mol^{-1} cm^{-1})</th></tr>
<tr><td rowspan="2">Acidic solution</td><td>242</td><td>10500</td></tr>
<tr><td>290</td><td>1310</td></tr>
<tr><td rowspan="2">Neutral solution</td><td>242</td><td>10400</td></tr>
<tr><td>290</td><td>1330</td></tr>
<tr><td rowspan="2">Basic solution</td><td>242</td><td>10600</td></tr>
<tr><td>290</td><td>1330</td></tr>
</table></td><td>Acceptable.</td><td>Y</td><td>Study Report Number: 41304121

TPP-0005

[redacted] (2014)</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td>No absorbance was observed above 300 nm. The absorptions in the range 210-900 nm were measured.</td><td></td><td></td><td></td></tr>
<tr><td>Infrared (IR) B.2.4/02</td><td>Perkin-Elmer Spectrum Two Fourier-transform infrared spectrophotometer</td><td>Inpyrfluxam (S-2399 PAI)

Batch number: YT3424G

Purity: 99.9%</td><td>Test item was scanned directly on a Universal ATR accessory.

<table><tr><th>Wavenumber (cm^{-1})</th><th>Assignment</th></tr><tr><td>3435 and 3323</td><td>N-H stretch, secondary amide</td></tr><tr><td>~2800 – 3000</td><td>C-H stretch, saturated (aliphatic)</td></tr><tr><td>1663, 1646 and 1545</td><td>C=O stretch and N-H bending, secondary amide, C=C stretch</td></tr></table>
It was not possible to positively identify the test item from the IR alone however, it confirmed the presence of the main functional groups of the proposed chemical structure of Inpyrfluxam.</td><td>Acceptable.

Consistent with the structure of Inpyrfluxam.</td><td>Y</td><td>Study Report Number: 41304121

TPP-0005

[redacted] (2014)</td></tr>
</table>

<table>
<tr>
<td>Nuclear magnetic resonance (NMR)
B.2.4/03</td>
<td>Avance III 600 NMR spectrometer</td>
<td>Inpyrfluxam (S-2399 PAI)

Batch number: YT3424G

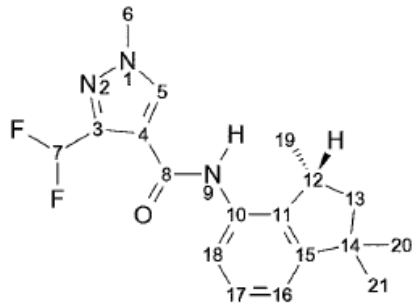
Purity: 99.9%</td>
<td>Sample prepared in DMSO-d_6 and analysed at 25 °C for proton spectra.
<table>
<tr><th>Chemical shift (ppm)</th><th>Assignment (Carbon #)</th><th>Observation</th></tr>
<tr><td>1.12</td><td>19</td><td>Doublet</td></tr>
<tr><td>1.17, 1.31</td><td>20, 21</td><td>Singlets</td></tr>
<tr><td>1.50 / 2.14</td><td>13</td><td>Doublet of doublets</td></tr>
<tr><td>2.50</td><td>Solvent (DMSO)</td><td>-</td></tr>
<tr><td>3.34</td><td>Water</td><td>-</td></tr>
<tr><td>3.42</td><td>12</td><td>Multiplet</td></tr>
<tr><td>3.97</td><td>6</td><td>Singlet</td></tr>
<tr><td>7.05, 7.11</td><td>16, 18</td><td>Doublets</td></tr>
<tr><td>7.19</td><td>17</td><td>Triplet</td></tr>
<tr><td>7.42 / 7.33 / 7.24</td><td>7</td><td>Triplet</td></tr>
</table>
</td>
<td>Acceptable.

Consistent with the structure of Inpyrfluxam.</td>
<td>Y</td>
<td>Study Report Number: 41304128

TPP-0004

[redacted] (2017)</td>
</tr>
</table>

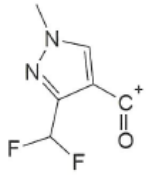
8.44	5	Singlet
9.73	9-N**H**	Singlet



Sample prepared in DMSO-d_6 and analysed at 25 °C for carbon spectra.

Chemical shift (ppm)	**Assignment (Carbon #)**	**Orientation at ^{13}C (APT)**
19.7	19	(-)
29.8, 29.9	20, 21	(-)
35.8	12	(-)

			39.4	6	(-)			
			39.5	Solvent (DMSO)	-			
			42.6	14	(+)			
			49.6	13	(+)			
			108.1 / 109.7 / 111.2	7	(-)			
			115.9 / 116.0 / 116.0	4	(+)			
			123.8 / 127.0 / 119.5	16, 17, 18	(-)			
			132.8	5	(-)			
			133.3, 140.8	10, 11	(+)			
			144.8 / 145.0 / 145.1	3	(+)			

			153.4 / 15 / (+) 159.5 / 8 / (+)		
Mass spectra (MS) B.2.4/04	Finnigan TRACE GC/MS mass spectrometer	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	**m/z** / **Fragment ion** 333 / Parent molecule 159 / 	Acceptable. Consistent with the structure of Inpyrfluxam.	Y	Study Report Number: 41304128 TPP-0004 [redacted] (2017)
Spectra for impurities B.2.4/05	-	-	-	Not required as there are no relevant impurities identified.	-	-
B.2.5. Solubility in Water						
Solubility in water B.2.5/01	OECD Test Guideline 105 (Flask method) EC A.6	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G	1.64 x 10^{-2} g/L at 20 °C, with solution pH values within the range 5.5 to 5.8. It is noted that no assessment of the influence of pH on the water solubility of the test item was	Acceptable. Inpyrfluxam is moderately soluble.	Y	Study Report Number: 41303367 TPP-0001

	EPA/OCSPP 830.7840	Purity: 99.9%	conducted. A reason was provided in the study report: *"From structural information provided by the Sponsor, the test item contained no chemical functional groups which would allow ionization of the test item within the environmentally relevant pH range."*	The HPLC method within TPP-0001 is acceptably validated. Refer to CA B5.		[redacted] (2013)
B.2.6. Solubility in Organic Solvents						
Solubility in organic solvents B.2.6/01	OECD Test Guideline 105 (Flask method) EC A.6 EPA/OCSPP 830.7840	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	Acetone: 621 g/L at 20 °C Dichloromethane: 353 g/L at 20 °C Ethyl acetate: 396 g/L at 20 ºC *n*-Hexane: 0.982 g/L at 20 ºC Methanol: 368 g/L at 20 °C *n*-Octanol: 84.6 g/L at 20 ºC Toluene: 67.9 g/L at 20 ºC	Acceptable. Solubility tested across an appropriate range of solvent types. The active as manufactured was found to be readily soluble in acetone, dichlormethane, ethyl acetate, methanol, toluene and n-octanol. In n-hexane, it was found to be	Y	Study Report Number: 41501170 TPP-0012 [redacted] (2016)

				moderately soluble. The HPLC method within TPP-0012 is acceptably validated. Refer to CA B5 (Validation report number: 8456378; TPA-0085).		
B.2.7. Partition Coefficient N-Octanol/Water						
Partition coefficient n-octanol/water B.2.7/01	OECD Test Guideline 107 (Flask Method) EC A.8 EPA/OCSPP 830.7550	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	Log P_{ow} = 3.65 at 25 ºC, within the pH range 7.1 to 7.3. It is noted that no assessment of the influence of pH on the partition coefficient of the test item was conducted. A reason was provided in the study report: *"From structural information provided by the Sponsor, the test item contained no chemical functional groups which would allow ionization of the test item within the environmentally relevant pH range."*	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate. Potentially fat soluble. The HPLC method within TPP-0002 is acceptably validated. Refer to CA B5.	Y	Study Report Number: 41303719 TPP-0002 [redacted] (2013)

Partition coefficient n- octanol /water B.2.7/02	OECD Test Guideline 117 (HPLC Method) EPA/OCSPP 830.7570	Metabolite of Inpyrfluxam; 3'-OH-S-2840 Batch number: CTS14006 Purity: 97.8%	Log P_{ow} = 2.53 at pH 6.5 and 25 ºC	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate.	Y	Study Report Number: 3201598 TPP-0020 [redacted] (2016)
Partition coefficient n- octanol /water B.2.7/03	OECD Test Guideline 117 (HPLC Method) EPA/OCSPP 830.7570	Metabolite of Inpyrfluxam; 1'-COOH-S-2840A Lot number: AS 2393a / CTS13015 Purity: 100%	Log P_{ow} = 0.84 at pH 5 and 25 ºC Log P_{ow} = <0.3 at pH 7 and 25 ºC Log P_{ow} = <0.3 at pH 9 and 25 ºC	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate.	Y	Study Report Number: 3201599 TPP-0021 [redacted] (2016)
Partition coefficient n- octanol /water B.2.7/04	OECD Test Guideline 117 (HPLC Method) EPA/OCSPP 830.7570	Metabolite of Inpyrfluxam; 1'-COOH-S-2840B Lot number: AS 2394a / CTS13016 Purity: 99.6%	Log P_{ow} = 0.97 at pH 5 and 25 ºC Log P_{ow} = <0.3 at pH 7 and 25 ºC Log P_{ow} = <0.3 at pH 9 and 25 ºC	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate.	Y	Study Report Number: 3201599 TPP-0021 [redacted] (2016)

Partition coefficient n- octanol /water B.2.7/05	OECD Test Guideline 117 (HPLC Method)	Metabolite of Inpyrfluxam; 1'-CH_2OH-S-2840A Lot number: 16SC8508367 Purity: 99.9%	Log P_{ow} = 0.883 at pH 7 and 25 ºC	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate.	Y	Study Report Number: 3202779 TPP-0051 Thomas, D., [redacted] (2020)
Partition coefficient n- octanol /water B.2.7/06	OECD Test Guideline 117 (HPLC Method)	Metabolite of Inpyrfluxam; 1'-CH_2OH-S-2840B Lot number: 16SC8508368 Purity: 99.5%	Log P_{ow} = 1.242 at pH 7 and 25 ºC	Acceptable. Log P_{ow} <4 hence no potential to bioaccumulate.	Y	Study Report Number: 3202779 TPP-0051 Thomas, D., [redacted] (2020)
B.2.8. Dissociation in Water						
Dissociation constant B.2.8/01	Justfication made based on UV-Visible spectra	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G	It is noted that no assessment of the test items dissociation in water was conducted. A reason was provided in the study report: *"The UV-Visible spectra of S-2399 recorded at pH's of 1, 7 and 12 contain no significant differences. This demonstrates that S-2399 displays no dissociative activity in the pH range 1*	Acceptable.	Y	Study Report Number: 41304121 TPP-0005

		Purity: 99.9%	*to 12. Therefore, this data requirement is not triggered."*			[redacted] (2014)
B.2.9. Flammability and Self-Heating						
Flammability B.2.9/01	EC Test A.10	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	Inpyrfluxam failed to ignite during two minutes of application of the test flame and is not highly flammable.	Acceptable. Not classified as a flammable solid.	Y	Study Report Number: XR24YD TPP-0024 [redacted] P. (2017)
Self-heating B.2.9/02	EC Test A.16	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	No relative self-ignition temperature was observed up to 114 ºC (10 ºC above the melting point)	Acceptable. Not classified as a self-heating substance.	Y	Study Report Number: XR24YD TPP-0024 [redacted] P. (2017)

B.2.10. Flash Point

Flash point B.2.10/01	-	-	-	Not considered as Inpyrfluxam does not have a melting point below 40 ºC. Acceptable.	-	-

B.2.11. Explosive Properties

Explosive properties B.2.11/01	UN RTDG Appendix 6 (Theoretical estimation)	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	The applicant has stated: *"S-2399 does not contain any chemical groups associated with explosive properties. The oxygen balance was found to be <-200. Explosive properties can therefore be predicted negative."*	The pyrazole ring in inpyrfluxam contains contiguous N atoms; a chemical group that indicates explosive properties. Therefore, the case provided is not sufficient to justify inpyrfluxam not being	Y	Study Report Number: XR24YD TPP-0024 [redacted] P. (2017)

				classified as explosive. Not acceptable. ~~Explosive properties data is expected November 2025~~		
Explosive properties B.2.11/02	EC Test A.14 EPA/OCSPP 830.6316	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	DSC test: The constant stability temperature (CTS) was determined to be 230 ºC. BAM fall hammer: No signs of explosion or ignition on impact in all five tests.	Not acceptable. Exothermic decomposition temperature and onset temperature of decomposition were not determined. ~~Explosive properties data is expected November 2025~~	Y	Study Report Number: 41501170 TPP-0012 [redacted] (2016)
Explosive properties B.2.11/03	Differential scanning calorimetry	Inpyrfluxam (S-2399 TGAI)	The onset of exothermic decomposition was 137.9 and 373.3 °C. The total decomposition energy was 309.9 J. g^{-1}	Acceptable Not classified as an explosive substance	Y	Study Report Number:

		Batch number: 220642 Purity: 97.8%		because the onset of exothermic decomposition was <500 °C and the total decomposition energy was <500 J. g^{-1}.		GLP 3016018835R1/ 2025 TPP-0061 [redacted]
B.2.12. Surface Tension						
Surface tension B.2.12/01	OECD Test Guideline 115 (Ring method) EC Test A.5	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	The surface tension of 90% saturated solutions of the test item is 60.4 mN/m at 21.3 ± 0.5 ºC.	Acceptable. Inpyrfluxam is not considered surface active.	Y	Study Report Number: 41501169 TPP-0010 [redacted] (2016)
B.2.13. Oxidising Properties						
Oxidising properties B.2.13/01	UN RTDG Appendix 6	Inpyrfluxam (S-2399 TGAI)	Inpyrfluxam does contain oxygen and fluorine atoms however they are only bonded to carbon atoms. Therefore, the oxidising properties are predicted as negative.	Acceptable. Not classified as an oxidising solid.	Y	Study Report Number: XR24YD

	(Theoretical estimation)	Batch number: 13CG0617G Purity: 95%				TPP-0024 [redacted] P. (2017)
B.2.14. Other Studies						
Density **B.2.14/01**	OECD Test Guideline 109 (Gas comparison pycnometer method) EC Test A.3 EPA/OCSPP 830.7300	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	The density of the test item is 1.24 x 10^3 kg/m^3 at 20.0 ± 1.0 °C; relative density: 1.24.	Acceptable.	Y	Study Report Number: 41501169 TPP-0010 [redacted] (2016)
Thermal stability and stability in air **B.2.14/02**	OECD Test Guideline 113 (DSC method)	Inpyrfluxam (S-2399 PAI) Batch number: YT3424G Purity: 99.9%	An endothermic event at ~105 ºC was considered to be due to melting. An exothermic event occurred from ~250 ºC which has been determined to be decomposition. No other exothermic or endothermic events were observed under air or nitrogen atmospheres.	Acceptable.	Y	Study Report Number: 41501169 TPP-0010 [redacted] (2016)

<table>
<tr>
<td>Oxidation/reduction: chemical incompatibility B.2.14/03</td>
<td>EPA/OCSPP 830.6314</td>
<td>Inpyrfluxam (S-2399 TGAI)

Batch number: 13CG0617G

Purity: 95%</td>
<td>Test item was added to various reagents and left to stand at room temperature (20 ºC) for 24 hours.
<table>
<tr><th rowspan="2">Reagent</th><th colspan="2">Observation</th></tr>
<tr><th>On addition</th><th>After 24 hours</th></tr>
<tr><td>Purified water</td><td>White solid suspended over liquid</td><td>Most of the liquid has been absorbed forming a thick white paste with no free liquid phase present</td></tr>
<tr><td>Monoammonium phosphate</td><td>Mix of fine, white powder and white, crystalline powder</td><td>Mix of fine, white powder and white, crystalline powder</td></tr>
<tr><td>Zinc filings</td><td>Mixture of grey and white powders</td><td>Mixture of grey and white powders, to</td></tr>
</table>
</td>
<td>Acceptable.

No significant oxidation, reduction or chemical incompatibility was observed.</td>
<td>Y</td>
<td>Study Report Number: 41501170

TPP-0012

[redacted] (2016)</td>
</tr>
</table>

					form a pale grey powder			
			0.1 M potassium permanganate solution	Purple solution with white powder suspended above	Dark brown wet solid (slurry-like)			
			Kerosene	White fully wet solid with liquid above	Thick white liquid, ~ 2/3 of the sample, with a paler, more opaque white liquid forming the top ~ 1/3. Bottom 2/3 layer is full of sedimentation			
			Evolution of gases, noxious fumes, splattering and evolution of flame was not observed for any of the reagent mixtures. Additionally, no temperature increase of more than 5 ºC was observed.					

pH B.2.14/04	CIPAC MT 75.3 OECD Test Guideline 122 EPA/OCSPP 830.7000	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	pH of 1% aqueous dilution: 7.00 at 25 ºC	Acceptable.	Y	Study Report Number: 41501170 TPP-0012 [redacted] (2016)
Density B.2.14/05	OECD Test Guideline 109 (Gas comparison pycnometer method) EC Test A.3 EPA/OCSPP 830.7300	Inpyrfluxam (S-2399 TGAI) Batch number: 13CG0617G Purity: 95%	The density of the test item is 1.23 x 10^3 kg/m^3 at 20.0 ± 1.0 °C; relative density: 1.23.	Acceptable.	Y	Study Report Number: 41501170 TPP-0012 [redacted] (2016)

Summary of physical and chemical properties of the active substance

Inpyrfluxam is a beige solid in the form of granules, with a melting point of 104 ºC (pure) and a decomposition temperature of 250 ºC (pure). Inpyrfluxam is not classified as flammable, explosive or oxidising and is not a self-heating substance. ~~Explosive properties data is expected Nov 2025 which will confirm classification~~. The pure active substance is slightly soluble in pure water (1.64 x 10^{-2} g/L at pH 5.5 to 5.8). It has a n-octanol/water coefficient log P_{ow} of 3.65 at pH ~7.2 at 25 ºC, indicating it does not

have the potential to bioaccumulate. UV/VIS, IR, NMR, and MS spectra are available for the active substance and are consistent with its structure.

B.2.15. References Relied On

Literature search

A literature review has been carried out for the active substance inpyrfluxam. One literature search was submitted to address all areas of the risk assessment. HSE has assessed the suitability of the mechanics of the literature search in line with EFSA guidance on conducting literature searches (EFSA Journal 2011). The literature review was conducted in accordance with Article 8(5) of Regulation No. 1107/2009 at the time of completion, and was conducted to comply with the EFSA guidance document as published in EFSA Journal 2011; 9(2):2092.

The process of selection of relevant scientific peer-reviewed open literature was based on a single-concept search in the CAS and Dialog platform databases. The time period was limited to studies published July 2013 up to July 2023 using the search criteria of inpyrfluxam, metabolites and mixtures and related CAS numbers, common names, trade names and lab codes.

A stepwise process for selection of relevant scientific peer-reviewed open literature was undertaken:

- A rapid assessment of the summary records references (e.g., titles, abstracts, index terms, keywords) was conducted.
- Summary records which appeared to be relevant went to the next level of evaluation.
- These were further evaluated and categorized into “reliable without restriction”, “reliable with restriction”, “not reliable” and “not assignable”.

The results of the literature review are as follows:

Summary of the review	n	Justification
Total number of summary records retrieved from search	352	Appendix 1

Number of summary records excluded after rapid assessment for relevance (by title/abstract)	349	Appendix 6
Number of summary records of potential/unclear relevance assessed in further detail (by abstract/full-text)	3	Appendices 4 and 5
Number of studies excluded from the risk assessment after detailed assessment of full-text documents (i.e. not relevant)	2	
Number of studies not excluded for relevance after detailed assessment (i.e. relevant studies and studies of unclear relevance)	1	
Number of studies included in the dossier as supporting information (reliability criteria 1-2)	1	

In the area of physical and chemical data no records were considered relevant for the assessment of physical chemical properties of the active substance inpyrfluxam.

Conclusion

Regarding the literature search undertaken by the applicant, it is considered that the search is acceptable in terms of databases searched and the search criteria applied. No references of relevance to this assessment were identified.

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	Data Protection Claimed Y/N	Justification if Data Protection is claimed	Owner	Previous evaluation
KCA 2.1	[redacted]	2016	S-2399 PAI: Determination of Physico-Chemical Properties Envigo Research Ltd, UK Study No. 41501169 Sumitomo Chemical Co., Ltd. Report No: TPP-0010 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.2/01	[redacted]	2014	S-2399 PAI: Determination of Vapor Pressure Harlan Laboratories, UK	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.

			Study No. 41304332 Sumitomo Chemical Co., Ltd. Report No: TPP-0003 GLP: Yes Published: No					
KCA 2.2/02	[redacted]	2016	S-2399 – Henry's Law Constant, Exponent International Ltd., UK Study No. 1403863.UK0-9888 Sumitomo Chemical Co., Ltd. Report No. TPP-0011 GLP: No Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.3/01	[redacted]	2015	S-2399 PAI: Determination of Appearance Harlan Laboratories Ltd, UK Study No. 41304120 Sumitomo Chemical Co., Ltd. Report No: TPP-0006 GLP: Yes	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.

			Published: No					
KCA 2.3/02	[redacted]	2015	S-2399 TGAI: Determination of Appearance Harlan Laboratories, UK Study No. 41304529 Sumitomo Chemical Co., Ltd. Report No: TPP-0007 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.4/01	[redacted]	2014	S-2399 PAI: Determination of Infrared Spectrum and Ultraviolet/visible Spectra Harlan Laboratories Ltd, UK Study No. 41304121 Sumitomo Chemical Co., Ltd. Report No: TPP-0005 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.

KCA 2.4/02	[redacted]	2017	S-2399 PAI: Determination of NMR and Mass spectra. 1st Amendment. Spectral Service AG, Germany Study No. SSL04213 Sumitomo Chemical Co., Ltd. Report No: TPP-0004 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.5	[redacted]	2013	S-2399:Determination of Water Solubility Harlan Laboratories Ltd, UK Study No. 41303367 Sumitomo Chemical Co., Ltd. Report No: TPP-0001 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.6	[redacted]	2016	S-2399 TGAI: Determination of Physico-Cemical Properties,	N	Y	The study is necessary for this regulatory decision and is	SUM	N.A.

			Envigo Research Ltd., UK Study No. 41501170 Sumitomo Chemical Co., Ltd. Report No: TPP-0012 GLP: Yes Published: No			eligible for data protection		
KCA 2.7/01	[redacted]	2013	S-2399:Determination of Partition Coefficient (n-Octanol/Water) Harlan Laboratories Ltd, UK Study No. 41303719 Sumitomo Chemical Co., Ltd. Report No: TPP-0002 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.7/02	[redacted]	2016	3'-OH-S-2840 (S-2399 Metabolite): Determination of Octanol:Water Partition Coefficient Smithers Viscient Ltd.,UK Study No. 3201598,	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.

			Sumitomo Chemical Co., Ltd. Report No: TPP-0020 GLP: Yes Published: No					
KCA 2.7/03	[redacted]	2016	1'-COOH-S-2840A and 1'-COOH-S-2840B (S-2399 Metabolites): Determination of Octanol:Water Partition Coefficient and Effect of pH Smithers Viscient Ltd.UK Study No. 3201599 Sumitomo Chemical Co., Ltd. Report No: TPP-0021 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.7/04	[redacted]	2020	1'-CH2OH-S-2840 Metabolites: Evaluation of n-Octanol/Water Partition Coefficient by HPLC simulation	N	Y	The study is necessary for this regulatory decision and is	SUM	N.A.

			Smithers ERS Ltd.UK Study No. 3202779 Sumitomo Chemical Co., Ltd. Report No: TPP-0051 GLP: Yes Published: No			eligible for data protection		
KCA 2.9	[redacted]	2017	S-2399 TGAI: Determination of Hazardous Physico-Chemical Properties Envigo Research Ltd, UK Study No. XR24YD Sumitomo Chemical Co., Ltd. Report No: TPP-0024 GLP: Yes Published: No	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.
KCA 2.11/03	[redacted]	2025	Differential Scanning Calorimetry on a Sample of S-2399 TG (Inpyrfluxam Technical Grade) DEKRA Study No. GLP3016018835R	N	Y	The study is necessary for this regulatory decision and is eligible for data protection	SUM	N.A.

			/2025 Sumitomo Chemical Co., Ltd Report No: TPP-0061 GLP: Yes Published: No					

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