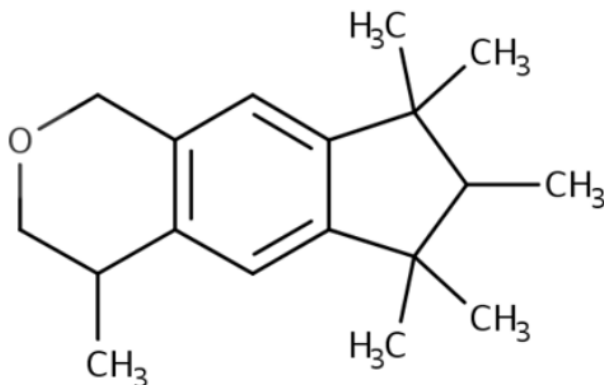


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**Draft Data Quality Evaluation and Data Extraction Information for  
Physical and Chemical Properties for  
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[ $\gamma$ ]-2-benzopyran (HHCB)**

**Systematic Review Support Document for the Draft Risk Evaluation**

**CASRN: 1222-05-5**



*March 2026*

This supplemental file contains information regarding the data extraction and evaluation results for data sources that were considered for the *Draft Risk Evaluation for 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)* and that underwent systematic review. EPA used the TSCA systematic review process described in the *Draft Systematic Review Protocol Supporting TSCA Risk Evaluations for Chemical Substances* (also referred to as the '2021 Draft Systematic Review Protocol'). The systematic review steps are further described in the *Draft Systematic Review Protocol for 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)*. EPA conducted data extractions and data quality evaluations based on author-reported descriptions and results; additional analyses (*e.g.*, statistical analyses) potentially conducted by EPA are not contained in this supplemental file. Additionally, the overall quality determination (OQD) for each reference represents the data as a whole for each study and not for individual metric domains within a study.

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HERO ID	Reference	Page
<b>Physical Form or State</b>		
8404084	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	6
5926119	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	7
5926383	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.	9
5932798	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..	10
5926119	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	11
<b>Melting Point</b>		
8404084	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	12
5932798	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..	13
8789348	IFF, (2009). Galaxolide: Freezing point determination by DSC method.	14
5926119	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	15
5926383	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.	16
5926153	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..	17
<b>Boiling Point</b>		
8404084	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	19
8785321	IFF, (2009). Galaxolide: Normal boiling point estimate (sanitized).	21
5926383	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.	22
5926265	RSC, (2019). ChemSpider: Galaxolide.	23
5926153	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..	25
5427889	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.	26
<b>Density</b>		
8404084	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	27
5926119	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	28

HHCB

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<b>5926383</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.	<b>29</b>
<b>Particle Size</b>		
<b>Vapor Pressure</b>		
<b>5349126</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.	<b>30</b>
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>31</b>
<b>5349143</b>	MacGillivray, A. R. (1966). Determination of vapor pressure for HHCB.	<b>32</b>
<b>5926119</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	<b>33</b>
<b>6967359</b>	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.	<b>34</b>
<b>5349388</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.	<b>35</b>
<b>5926153</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..	<b>36</b>
<b>5427889</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.	<b>37</b>
<b>logKow</b>		
<b>5349126</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.	<b>44</b>
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>45</b>
<b>5932798</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..	<b>49</b>
<b>5926119</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	<b>50</b>
<b>5349388</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.	<b>51</b>
<b>5926265</b>	RSC, (2019). ChemSpider: Galaxolide.	<b>52</b>
<b>5926153</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..	<b>54</b>
<b>Water Solubility</b>		
<b>5349126</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.	<b>55</b>
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>56</b>
<b>7607850</b>	Edwards, D. E. (1996). Determination of water solubility for 14C-HHCB.	<b>59</b>
<b>7681884</b>	NCBI, (2020). PubChem Compound Summary for CID 91497: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB) Galaxolide.	<b>62</b>
<b>5926119</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	<b>63</b>
<b>5349388</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.	<b>64</b>

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<b>5926153</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..	<b>65</b>
<b>Flash Point</b>		
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>66</b>
<b>8789332</b>	IFF, (2020). HHCB/Galaxolide undiluted: Determination of adsorption coefficient (sanitized).	<b>67</b>
<b>8789350</b>	IFF, (2009). Galaxolide: Flash point determination by closed cup method.	<b>68</b>
<b>Autoflammability</b>		
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>69</b>
<b>8789316</b>	IFF, (2014). Final report: Determination of the auto-ignition temperature (liquid) of HHCB (multi-constituent) (sanitized).	<b>70</b>
<b>pKa</b>		
<b>Viscosity</b>		
<b>5926119</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	<b>71</b>
<b>Refractive Index</b>		
<b>5932798</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..	<b>72</b>
<b>5926119</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.	<b>73</b>
<b>5926383</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.	<b>74</b>
<b>Henry's Law</b>		
<b>5349126</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.	<b>75</b>
<b>5155574</b>	ECB, (2008). European Union risk assessment report: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran (HHCB).	<b>76</b>
<b>8404084</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6- c]pyran - HHCB) summary risk assessment report.	<b>77</b>
<b>6629630</b>	NCBI, (2020). PubChem compound summary for CID 91497, Galaxolide.	<b>78</b>
<b>Nanomaterial Zeta</b>		
<b>Dielectric Constant</b>		
<b>UV and Visible Absorption</b>		
<b>Other Properties</b>		
<b>Miscellaneous</b>		
<b>6967359</b>	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.	<b>79</b>
<b>List of Abbreviations and Acronyms for Data Quality Evaluation and Extraction Tables</b>		<b>80</b>

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	8404084

## EXTRACTION

Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: 74-76% 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran CASRNs 78448-48-3 and 78448-49-4; 6-10% 1,3,4,6,7,8-hexahydro-4,6,6,8-tetramethyl-(6 or 8)-ethylcyclopenta- $\gamma$ -2-benzopyran CASRN 114109-63-6; and 5-8% 1,3,4,7,8,9-hexahydro-4,7,7,8,9,9-hexamethylcyclopenta[H]-2-benzopyran
Results Value	viscous liquid
Results Details	NR

## EVALUATION

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

High

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	5926119

**EXTRACTION**

Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Value	viscous liquid
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance			
	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability			
	Metric 3: Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other			
	Metric 5: Databases	High	Data is from a publicly available and peer-reviewed database.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: RIFM. 2003. Monographs on Fragrance Raw Materials. 1,3,4,6,7,8-Hexahydro-4,6,6,7,8-hexamethylcyclopenta-gamma-2-benzopyran. Woodcliff Lake, NJ: Research Institute for Fragrance Materials.

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	5926119

**EXTRACTION**

Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Value	colorless crystals from ethanol
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available and peer-reviewed database.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 872.



<b>Study Citation:</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	5926383

**EXTRACTION**

Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Value	solid colorless crystals
Results Details	Data is for the mixed isomers

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5: Databases	High	Data is from a recognized data collection where data are peer-reviewed by experts in the field.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	5932798

**EXTRACTION**

Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details	colorless

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5: Databases	High	Data is from a peer-reviewed database that contains references to the original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: Patent; Hangzhou Geng Lan Biological Technology Co., Ltd.; Dong Qiuyue; (7 pag.); CN108250175; (2018); (A) Chinese

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Physical Form or State
<b>HERO ID:</b>	5926119

EXTRACTION	
Parameter	Data
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details	colorless, strong musk odor

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available and peer-reviewed database.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination **High**

\* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 872.

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	8404084

**EXTRACTION**

Parameter	Data
Melting Point	-10 - 0 °C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	determined by cooling to -30 °C and gradual warm up
Standard Deviation Results	NR
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	5932798

**EXTRACTION**

Parameter	Data
Melting Point	57 - 58 °C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a secondary database with a references to the peer-reviewed original source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: Frater, Georg; Mueller, Urs; Kraft, Philip; Helvetica Chimica Acta; vol. 82; nb. 10; (1999); p. 1656 - 1665

<b>Study Citation:</b>	IFF, (2009). Galaxolide: Freezing point determination by DSC method.
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	8789348

**EXTRACTION**

Parameter	Data
Melting Point	≤ -20 °C
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	Not Reported; experimental; DSC method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Results Details Methods	Freezing point determination via differential scanning calorimetry
Standard Deviation Results	Not reported
Results Details	Not reported

**EVALUATION**

Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	5926119

**EXTRACTION**

Parameter	Data
Melting Point	57 - 58 °C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 871.

<b>Study Citation:</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	5926383

**EXTRACTION**

Parameter	Data
Melting Point	57 - 58 °C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Data is for the mixed isomers; melting point for specific isomers: (-)-(4S,7R)-form CASRN 252332-95-9 MP = 78-78.5°C; (-)-(4S,7S)-form CASRN 172339-62-7 MP = 57-58°C; (-)-(4R,7S)-form CASRN 172339-63-8 MP = 77-78°C; and (-)-(4R,7R)-form CASRN 252332-96-0 MP = 52-53°C.
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	Medium	Data measured for a structural analogue of the subject chemical substance are not consistent with the subject chemical substance structural properties, features or behaviors, or the structural features or behaviors of the subject chemical substance are uncertain.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 871-872.



<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..
<b>OECD Harmonized Template:</b>	Melting Point
<b>HERO ID:</b>	5926153

**EXTRACTION**

Parameter	Data
Melting Point	-5 °C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available database that provides references to the original, peer-reviewed source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: PhysProp

<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..			
<b>OECD Harmonized Template:</b>	Melting Point			
<b>HERO ID:</b>	5926153			
EXTRACTION				
Parameter	Data			
Melting Point	-5 °C			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	None; Experimental; Not Reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Results Details Methods	Not Reported			
Standard Deviation Results	Not Reported			
Results Details	Not Reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

\* Related References: Jean-Claude Bradley Open Melting Point Dataset

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	8404084

EXTRACTION	
Parameter	Data
Boiling Point	160 - C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	NR
Results Details	Measured at at 4 mm Hg by distillation of HHCB in manufacturing plant(conform mathematical conversion into 330 °C at 760 mm Hg)

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	Boiling Point			
<b>HERO ID:</b>	8404084			
EXTRACTION				
<b>Parameter</b>	<b>Data</b>			
Boiling Point	325 - C			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; calculation; Stein and Brown method MpBp			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Standard Deviation Results	NR			
Results Details	Measured at 760 mm Hg by distillation of HHCB in manufacturing plant.162 °C at 4 hPa			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology’s objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data’s inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

<b>Study Citation:</b>	IFF, (2009). Galaxolide: Normal boiling point estimate (sanitized).
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	8785321

EXTRACTION	
Parameter	Data
Boiling Point	= 318.6 C
CASRN and Test Material	1222-05-5; galaxolide
Confidentiality, Type, and Guideline	No (some information redacted); Estimation from extrapolation of experimental data; Non-guideline
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: NR
Standard Deviation Results	not reported
Results Details	at 1 atm; experimental vapor pressure vs temperature data over a range of pressures were fit to an Antoine Equation and Antoine parameters (A, B, C) through regression analysis. Boiling point estimated from equation at 760 mm Hg.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination**
**High**

<b>Study Citation:</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	5926383

**EXTRACTION**

Parameter	Data
Boiling Point	129 C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	@ 0.8 torr

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 871-872.

<b>Study Citation:</b>	RSC, (2019). ChemSpider: Galaxolide.
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	5926265

EXTRACTION	
Parameter	Data
Boiling Point	326.3 C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used
Domain 3: Other	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**Medium**

\* Related References: Cayman Chemical

<b>Study Citation:</b>	RSC, (2019). ChemSpider: Galaxolide.			
<b>OECD Harmonized Template:</b>	Boiling Point			
<b>HERO ID:</b>	5926265			
EXTRACTION				
Parameter	Data			
Boiling Point	326.3 C			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	None; Experimental; Not Reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Standard Deviation Results	Not Reported			
Results Details	Not Reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical’s physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used
Domain 3: Other	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

\* Related References: Chemenu



<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	5926153

**EXTRACTION**

Parameter	Data
Boiling Point	325 C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available database that provides references to the original, peer-reviewed source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: PhysProp

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Boiling Point
<b>HERO ID:</b>	5427889

EXTRACTION	
Parameter	Data
Boiling Point	615.1 K
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Calculation; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.
Standard Deviation Results	± 1.7 K
Results Details	Calculated at p_o = 101325 Pa using relationship of vapor pressures of hydrocarbon standards and constants evaluated by SigmaPlott 11.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25 deg C and a boiling point above 25 deg C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Density
<b>HERO ID:</b>	8404084

**EXTRACTION**

Parameter	Data
Density	0.99 - 1.015 g/cm <sup>3</sup>
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; OECD TG 109
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Density Type	relative density
System	oscillating densitometer
Temperature	20C
Standard Deviation Results	NR
Results Details	NR

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Density
<b>HERO ID:</b>	5926119

EXTRACTION	
Parameter	Data
Density	1.0054 g/cm3
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

\* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 871.

<b>Study Citation:</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.
<b>OECD Harmonized Template:</b>	Density
<b>HERO ID:</b>	5926383

**EXTRACTION**

Parameter	Data
Density	1.0054 g/cm3
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	at 20°C relative to water at 4°C; data is for the mixed isomers

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5349126

**EXTRACTION**

Parameter	Data
Vapor Pressure	0.0727 Pa
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD Test Guideline 104
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; NR Notes: 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta[g]2-benzopyran
Temperature	not reported
System	gas saturation method
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	8404084

**EXTRACTION**

Parameter	Data
Vapor Pressure	0.0727 - Pa
CASRN and Test Material	122-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; OECD TG 104
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14-C labelled HHCB; NR; NR; NR
Temperature	25C
System	gas saturation method
Standard Deviation Results	0.0123 Pa
Results Details	NR

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	MacGillivray, A. R. (1966). Determination of vapor pressure for HHCB.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5349143

**EXTRACTION**

Parameter	Data
Vapor Pressure	0.0472 - 0.0816 Pa
CASRN and Test Material	1222-05-5; HHCB; HHCB (phenyl-UL-14C)
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 104: Vapor pressure
Solvent, Reactivity, Storage, and Stability	NR; Stable; approx. 4°C in the dark (unlabeled); -20±5°C in the dark (radiolabeled); Stable
Radiolabel, Source, State, and Purity	No; 1000 dpm/uL phenyl-UL-14C; NR; assayed by LSC; liquid oil; 99.15% (unlabeled); determined to be 96.62% (radiolabeled). Notes: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-gamma-2-benzopyran; WESTON TSIN: FE94-0144 (unlabeled); FE95-002 (radiolabeled)
Temperature	25-26°C
System	Gaseous HHCB is adsorbed from a saturated stream of nitrogen. Concentration is determined and vapor pressure is calculated from nitrogen volume related to the mass adsorbed.
Standard Deviation Results	16.51%
Results Details	percent recovery was >=80% for all concentrations tested.

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**



<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5926119

EXTRACTION	
Parameter	Data
Vapor Pressure	5.45E-4 mm Hg
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION			
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available, peer-reviewed database that provides references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

<b>Overall Quality Determination</b>	<b>High</b>
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\* Related References: Balk, F., Ford, R.A. 1999. Toxicol Lett 111: 57-79.

<b>Study Citation:</b>	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	6967359

EXTRACTION	
Parameter	Data
Vapor Pressure	0.0380 - 0.0562 Pa
CASRN and Test Material	1222-05-5; galaxolide 1
Confidentiality, Type, and Guideline	None; Experimental; Non-guideline: Gas chromatography retention time GC-RT method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Sigma-Aldrich; NR; >85% Notes: 4,6,6,7,8,8-hexamethyl-1,3,4,7-tetrahydrocyclopenta[g]isochromene
Temperature	estimated at 298K; experimental: 343-363 K (69.85-89.85°C)
System	GC-RT assumes the chromatographic retention time is inversely proportional and proportional to its temperature dependent liquid-phase vapor pressure
Standard Deviation Results	±0.18 (standard prediction uncertainty estimated at K = 298)
Results Details	Calibrated Log10 Liquid-Phase Vapor Pressure = -1.25 (VP = 0.0562 Pa, ca. 4.2E-4 mm Hg); uncalibrated value Log10 Liquid-Phase Vapor Pressure = -1.42 Pa (VP = 0.0380 Pa, ca. 2.9E-4 mm Hg) (Average enthalpy of vaporization = 83.9±10 kJ/mol; HCB used as a reference compound)

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint; r2 = 0.978.

## Overall Quality Determination

## High

<b>Study Citation:</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5349388

**EXTRACTION**

Parameter	Data
Vapor Pressure	0.0727 Pa
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD 104
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; NR
Temperature	25°C
System	A stream of nitrogen was equilibrated with the test substance, which was then adsorbed from the gas stream by a sorbent, XAD-2.
Standard Deviation Results	0.012 Pa
Results Details	The mass of the adsorbed test substance was determined by LSC.

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5: Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and includes references to the original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: cites: HERO ID: 5349143: MacGillivray (1996). Determination of vapor pressure for HHCB. Report to RIFM, Roy F. Weston Inc. Study No. 95-040.

<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5926153

**EXTRACTION**

Parameter	Data
Vapor Pressure	5.45E-4 mm Hg
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available database that provides references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: PhysProp. US EPA 2004

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.			
<b>OECD Harmonized Template:</b>	Vapor Pressure			
<b>HERO ID:</b>	5427889			
<b>EXTRACTION</b>				
<b>Parameter</b>	<b>Data</b>			
Vapor Pressure	= 0.099 - = 6600 Pa			
CASRN and Test Material	1222-05-5; Galaxolide			
Confidentiality, Type, and Guideline	None; Experimental; Not reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.			
Temperature	310-500 K			
System	Vapor pressure was determined based on correlations between ln(p/p_o) and ln (t_o/t_a) of a mixture of n-alkanes and polycyclic hydrocarbon standards where p_o = 101325 Pa, t_a = residence time, and t_o = 60 sec. Gas chromatograph was used.			
Standard Deviation Results	±0.014 (at 310K) to ±60 (at 450K)			
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to hydrocarbon mixture standards. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.Tp /PA3100.099±0.0143200.27±0.0383300.71±0.0923401.7±0.213503.8±0.443608.1±0.8537016±1.538032±2.639058±4.1400100±6.3410160±9.3420290±14430460±224			
<b>EVALUATION</b>				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
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<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5427889

Domain	Metric	EVALUATION Rating	Comments
<b>Overall Quality Determination</b>		<b>High</b>	

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.			
<b>OECD Harmonized Template:</b>	Vapor Pressure			
<b>HERO ID:</b>	5427889			
<b>EXTRACTION</b>				
<b>Parameter</b>	<b>Data</b>			
Vapor Pressure	= 0.093 - = 6600 Pa			
CASRN and Test Material	1222-05-5; Galaxolide			
Confidentiality, Type, and Guideline	None; Experimental; Not reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.			
Temperature	310-500 K			
System	Vapor pressure was determined based on correlations between ln(p/p_o) and ln (t_o/t_a) of a n-alkane standards where p_o = 101325 Pa, t_a = residence time, and t_o = 60 sec. Gas chromatograph was used.			
Standard Deviation Results	±0.008 (at 310K) to ±4 (at 450K)			
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to hydrocarbon standard. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.Tp /PA3100.093±0.0033200.26±0.0083300.68±0.023401.6±0.043503.7±0.093607.9±0.1637016±0.3038031±0.539057±0.8400100±1.1410170±2.0420290±2.1430460±344			
<b>EVALUATION</b>				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
<b>Overall Quality Determination</b>		<b>High</b>		

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5427889

EXTRACTION	
Parameter	Data
Vapor Pressure	0.026 Pa
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.
Temperature	298.15 K
System	Vapor pressure was determined based on correlations between $\ln(p/p_o)$ and $\ln(t_o/t_a)$ of a mixture of n-alkanes and polycyclic hydrocarbon standards where $p_o = 101325$ Pa, $t_a$ = residence time, and $t_o = 60$ sec. Gas chromatograph was used.
Standard Deviation Results	$\pm 0.004$ Pa
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to hydrocarbon mixture standards. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High



<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5427889

EXTRACTION	
Parameter	Data
Vapor Pressure	0.019 Pa
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.
Temperature	296.15 K
System	Vapor pressure was determined based on correlations between $\ln(p/p_o)$ and $\ln(t_o/t_a)$ of a mixture of n-alkanes and polycyclic hydrocarbon standards where $p_o = 101325$ Pa, $t_a$ = residence time, and $t_o = 60$ sec. Gas chromatograph was used.
Standard Deviation Results	$\pm 0.001$ Pa
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to complex hydrocarbon standard. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

High

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5427889

EXTRACTION	
Parameter	Data
Vapor Pressure	0.024 Pa
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.
Temperature	298.15 K
System	Vapor pressure was determined based on correlations between $\ln(p/p_o)$ and $\ln(t_o/t_a)$ of a n-alkane standards where $p_o = 101325$ Pa, $t_a$ = residence time, and $t_o = 60$ sec. Gas chromatograph was used.
Standard Deviation Results	$\pm 0.001$ Pa
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to hydrocarbon standard. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

<b>Study Citation:</b>	Wootitunthipong, K., Chickos, J. (2019). Vaporization enthalpy and vapor pressure of (-) Ambroxide and Galaxolide by correlation gas chromatography. Journal of Chemical Thermodynamics 129:121-129.
<b>OECD Harmonized Template:</b>	Vapor Pressure
<b>HERO ID:</b>	5427889

EXTRACTION	
Parameter	Data
Vapor Pressure	0.021 Pa
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; TCI; viscous liquid; 0.89 mass fraction Notes: Sold as 0.48 mass fraction Galaxolide and 0.39 mass fraction diethyl phthalate.
Temperature	296.15 K
System	Vapor pressure was determined based on correlations between $\ln(p/p_o)$ and $\ln(t_o/t_a)$ of a n-alkane standards where $p_o = 101325$ Pa, $t_a$ = residence time, and $t_o = 60$ sec. Gas chromatograph was used.
Standard Deviation Results	$\pm 0.003$ Pa
Results Details	Liquid vapor pressure of Galaxolide determined by correlation to hydrocarbon standard. Retention times from gas chromatograph used for calculating vapor pressure are the average of 2 replicates.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome. Methodology well described but lacked strong theory support.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate. Complex mixture of hydrocarbons as a standard is a non-standard, experimental method.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

High

<b>Study Citation:</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	5349126

EXTRACTION	
Parameter	Data
log $k_{ow}$	5.9
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD Test Guideline 117
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta[g]2-benzopyran
Temperature	not reported
System	OECD Test Guideline 117
pH	not reported
Results Details Method	reversed-phase HPLC method
Standard Deviation Results	Not Reported
Results Details	The average value for the two principle isomers was taken.

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	8404084

EXTRACTION	
Parameter	Data
log $k_{ow}$	5.9 -
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; OECD TG 117
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	not reported
System	reversed-phase HPLC
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	logKow			
<b>HERO ID:</b>	8404084			
EXTRACTION				
Parameter	Data			
log $k_{ow}$	5.3 -			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; experimental; slow stirring method			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	not reported			
System	slow stirring method			
pH	not reported			
Results Details Method	not reported			
Standard Deviation Results	not reported			
Results Details	not reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	logKow			
<b>HERO ID:</b>	8404084			
EXTRACTION				
Parameter	Data			
log $k_{ow}$	6.26 -			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; calculation; not specified			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	not reported			
System	not specified			
pH	not reported			
Results Details Method	not reported			
Standard Deviation Results	not reported			
Results Details	not reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	logKow			
<b>HERO ID:</b>	8404084			
EXTRACTION				
Parameter	Data			
log $k_{ow}$	5.74 -			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; calculation; not specified			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	not reported			
System	not specified			
pH	not reported			
Results Details Method	not reported			
Standard Deviation Results	not reported			
Results Details	not reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		



<b>Study Citation:</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	5932798

EXTRACTION	
Parameter	Data
log $k_{ow}$	4.72 - 5.482
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	4 values were reported in Reaxys, measured conditions were not reported 3 values were reported in the range of log 4.72 - 5.482, 1 value, log $k_{ow}$ =7, was outside this range

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a secondary database with a references to the peer-reviewed original source.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: Data range determined from multiple primary sources in REAXYS.

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.			
<b>OECD Harmonized Template:</b>	logKow			
<b>HERO ID:</b>	5926119			
EXTRACTION				
Parameter	Data			
log k <sub>ow</sub>	5.9			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	None; Experimental; Not Reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	Not Reported			
System	Not Reported			
pH	Not Reported			
Results Details Method	Not Reported			
Standard Deviation Results	Not Reported			
Results Details	Not Reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical’s physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data’s inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available database that provides references to a peer-reviewed source.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

\* Related References: Balk, F., Ford, R.A.. 1999. Toxicol Lett 111: 57-79.

<b>Study Citation:</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	5349388

EXTRACTION	
Parameter	Data
log $k_{ow}$	5.8 - 6.0
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD Test Guideline 117
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	24°C
System	Not Reported
pH	not reported
Results Details Method	HPLC; detection wavelength 210 nm
Standard Deviation Results	not reported
Results Details	Log Kow average was 5.9; 5.8 for the main isomer and 6.0 for the other isomer.

EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: cites: HERO ID: 349148: Rudio, J. (1993). Partition coefficient n-octanol/water of GALAX OLIDE according to OECD guideline No. 117. Givaudan-Roure Corporate Safety & Environmental affairs. Test report No. 93 - E67.

<b>Study Citation:</b>	RSC, (2019). ChemSpider: Galaxolide.			
<b>OECD Harmonized Template:</b>	logKow			
<b>HERO ID:</b>	5926265			
EXTRACTION				
<b>Parameter</b>	<b>Data</b>			
log $k_{ow}$	4.349			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	None; Experimental; Not Reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	Not Reported			
System	Not Reported			
pH	Not Reported			
Results Details Method	Not Reported			
Standard Deviation Results	Not Reported			
Results Details	Not Reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical’s physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
Continued on next page ...				

<b>Study Citation:</b>	RSC, (2019). ChemSpider: Galaxolide.
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	5926265

EVALUATION				
Domain		Metric	Rating	Comments
Domain 1: Peer reviewed journal articles	Metric 1:	Journal	High	The analytical method is unknown and there is no indication that a reliable method was used.
	Metric 2:	Journal	High	The analytical method is unknown and there is no indication that a reliable method was used.
	Metric 3:	Journal	High	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 2: Other	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## Medium

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<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..
<b>OECD Harmonized Template:</b>	logKow
<b>HERO ID:</b>	5926153

EXTRACTION	
Parameter	Data
log $k_{ow}$	5.9
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available database that references peer-reviewed original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: PhysProp. US EPA 2004

<b>Study Citation:</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	5349126

EXTRACTION	
Parameter	Data
Water Solubility	1.75 mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD Test Guideline 105
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-HHCB; NR; NR; NR Notes: 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta[g]2-benzopyran
Temperature	25°C
System	flask method
pH	5; 7; 9
Results Details Method	OECD 105
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	8404084

EXTRACTION	
Parameter	Data
Water Solubility	1.75 - mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; FDA 1987
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25C
System	flask method
pH	not reported
Results Details Method	FDA 1987
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**



<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	Water Solubility			
<b>HERO ID:</b>	8404084			
EXTRACTION				
<b>Parameter</b>	<b>Data</b>			
Water Solubility	1.65 (pH 7) - mg/L			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; experimental; similar to OECD 105			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	14-C labelled; NR; NR; NR			
Temperature	not reported			
System	not specified			
pH	5, 7, 9			
Results Details Method	not reported			
Standard Deviation Results	not reported			
Results Details	Also reported 1.99 mg/L at pH 5; 1.69 mg/L at pH 9.			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	Water Solubility			
<b>HERO ID:</b>	8404084			
EXTRACTION				
Parameter	Data			
Water Solubility	2.3 - mg/L			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; experimental; column elution method			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
Temperature	not reported			
System	column elution method			
pH	not reported			
Results Details Method	not reported			
Standard Deviation Results	$\pm 0.14$			
Results Details	not reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

<b>Study Citation:</b>	Edwards, D. E. (1996). Determination of water solubility for 14C-HHCB.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	7607850

EXTRACTION	
Parameter	Data
Water Solubility	1.63 - 2.09 mg/L
CASRN and Test Material	1222-05-5; HHCB; HHCB (phenyl-UL-14C)
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 105: Water solubility
Solvent, Reactivity, Storage, and Stability	NR; Stable; approx. 4°C in the dark (unlabeled); -20±5°C in the dark (radiolabeled); Stable
Radiolabel, Source, State, and Purity	No; 1000 dpm/uL phenyl-UL-14C; NR; assayed by LSC; liquid oil; 99.15% (unlabeled); determined to be 96.62% (radiolabeled). Notes: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-gamma-2-benzopyran; WESTON TSIN: FE94-0144 (unlabeled); FE95-002 (radiolabeled)
Temperature	25±1°C
System	approx. 10 mg/L of 14C-HHCB added to 30 mL capacity centrifuge tubes; pH 5 buffer solution added to triplicate tubes that were sealed and agitated overnight; samples were collected at day 1, 2, 5 and 7.
pH	5
Results Details Method	LSC used to determine 14C-HHCB
Standard Deviation Results	Not reported
Results Details	average water solubility at pH 5 after 7 days of equilibration was 1.99 mg/L ±8.79%

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

<b>Study Citation:</b>	Edwards, D. E. (1996). Determination of water solubility for 14C-HHCB.			
<b>OECD Harmonized Template:</b>	Water Solubility			
<b>HERO ID:</b>	7607850			
EXTRACTION				
Parameter	Data			
Water Solubility	1.26 - 1.78 mg/L			
CASRN and Test Material	1222-05-5; HHCB; HHCB (phenyl-UL-14C)			
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 105: Water solubility			
Solvent, Reactivity, Storage, and Stability	NR; Stable; approx. 4°C in the dark (unlabeled); -20±5°C in the dark (radiolabeled); Stable			
Radiolabel, Source, State, and Purity	No; 1000 dpm/uL phenyl-UL-14C; NR; assayed by LSC; liquid oil; 99.15% (unlabeled); determined to be 96.62% (radiolabeled). Notes: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-gamma-2-benzopyran; WESTON TSIN: FE94-0144 (unlabeled); FE95-002 (radiolabeled)			
Temperature	25±1°C			
System	approx. 10 mg/L of 14C-HHCB added to 30 mL capacity centrifuge tubes; pH 7 buffer solution added to triplicate tubes that were sealed and agitated overnight; samples were collected at day 1, 2, 5 and 7.			
pH	7			
Results Details Method	LSC used to determine 14C-HHCB			
Standard Deviation Results	Not reported			
Results Details	average water solubility at pH 7 after 7 days of equilibration was 1.65 mg/L ±7.58%			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured for the subject chemical substance.	
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.	
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology’s objective is clear.	
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.	
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.	
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Quality Determination		High		

<b>Study Citation:</b>	Edwards, D. E. (1996). Determination of water solubility for 14C-HHCB.			
<b>OECD Harmonized Template:</b>	Water Solubility			
<b>HERO ID:</b>	7607850			
EXTRACTION				
Parameter	Data			
Water Solubility	1.37 - 1.60 mg/L			
CASRN and Test Material	1222-05-5; HHCB; HHCB (phenyl-UL-14C)			
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 105: Water solubility			
Solvent, Reactivity, Storage, and Stability	NR; Stable; approx. 4°C in the dark (unlabeled); -20±5°C in the dark (radiolabeled); Stable			
Radiolabel, Source, State, and Purity	No; 1000 dpm/uL phenyl-UL-14C; NR; assayed by LSC; liquid oil; 99.15% (unlabeled); determined to be 96.62% (radiolabeled). Notes: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-gamma-2-benzopyran; WESTON TSIN: FE94-0144 (unlabeled); FE95-002 (radiolabeled)			
Temperature	25±1°C			
System	approx. 10 mg/L of 14C-HHCB added to 30 mL capacity centrifuge tubes; pH 9 buffer solution added to triplicate tubes that were sealed and agitated overnight; samples were collected at day 1, 2, 5 and 7.			
pH	9			
Results Details Method	LSC used to determine 14C-HHCB			
Standard Deviation Results	Not reported			
Results Details	average water solubility at pH 9 after 7 days of equilibration was 1.60 mg/L ±8.19%			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured for the subject chemical substance.	
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.	
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology’s objective is clear.	
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.	
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.	
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Quality Determination		High		

<b>Study Citation:</b>	NCBI, (2020). PubChem Compound Summary for CID 91497: 1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB) Galax-olide.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	7681884

EXTRACTION	
Parameter	Data
Water Solubility	1.65 - 1.99 mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; not specified; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
System	Not reported
pH	5-9
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain		Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

\* Related References: Cited: ECHA; Search for Chemicals. 1,3,4,6,7,8-hexahydro-4,6,6,7,8-hexmethyldeno[5,6-c]pyran. (1222-05-5) Registered Substances Dossier. European Chemical Agency. Available from, as of Jun 7, 2018: <http://echa.europa.eu/>

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	5926119

EXTRACTION	
Parameter	Data
Water Solubility	1.75 mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
System	Not Reported
pH	Not reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available database that provides references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: Balk, F., Ford, R.A.. 1999. Toxicol Lett 111: 57-79.

<b>Study Citation:</b>	RIVM, (1997). Environmental risk assessment of the polycyclic musks AHTN and HHCB according to the EU-TGD.
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	5349388

EXTRACTION	
Parameter	Data
Water Solubility	1.65 mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; OECD Test Guideline 105
Solvent, Reactivity, Storage, and Stability	ethanol; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; NR
Temperature	25°C
System	flask method; 7 days of equilibration
pH	7
Results Details Method	LSC
Standard Deviation Results	not reported
Results Details	1.60 mg/L @ pH 9; 1.99 mg/L @ pH 5

EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: cites: HERO ID: 7607850: Edwards, D.E. (1996). Determination of water solubility 14C-HHCB. Report to RIFM, Weston Study No. 95-032.



<b>Study Citation:</b>	U.S. EPA, (2019). Chemistry Dashboard Information for Galaxolide. 1222-05-5..
<b>OECD Harmonized Template:</b>	Water Solubility
<b>HERO ID:</b>	5926153

EXTRACTION	
Parameter	Data
Water Solubility	1.75 mg/L
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION			
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a publicly available database that provides references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

\* Related References: PhysProp. US EPA 2004

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Flash Point
<b>HERO ID:</b>	8404084

**EXTRACTION**

Parameter	Data
Flash Point	> 100 - C
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; Pensky Martens Dir. 84/449/EEC, A.9
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	closed cup
Standard Deviation Results	not reported
Results Details	not reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	IFF, (2020). HHCB/Galaxolide undiluted: Determination of adsorption coefficient (sanitized).			
<b>OECD Harmonized Template:</b>	Flash Point			
<b>HERO ID:</b>	8789332			
<b>EXTRACTION</b>				
<b>Parameter</b>	<b>Data</b>			
Flash Point	291 F			
CASRN and Test Material	1222-05-5; Galaxolide			
Confidentiality, Type, and Guideline	Not Reported; experimental; not specified			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; International flavours & fragrances; NR; NR			
System	not specified			
Standard Deviation Results	not specified			
Results Details	144 C			
<b>EVALUATION</b>				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Uninformative	The analytical method is unknown.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
<b>Overall Quality Determination</b>		<b>Uninformative</b>		

<b>Study Citation:</b>	IFF, (2009). Galaxolide: Flash point determination by closed cup method.
<b>OECD Harmonized Template:</b>	Flash Point
<b>HERO ID:</b>	8789350

**EXTRACTION**

Parameter	Data
Flash Point	= 144 - C
CASRN and Test Material	122-05-5; Galaxolide; cyclopenta[G]-2-benzopyran, 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethyl
Confidentiality, Type, and Guideline	Not Reported; experimental; Closed cup method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
System	Closed cup
Standard Deviation Results	not reported
Results Details	not reported

**EVALUATION**

Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data obtained by accepted analytical method.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.			
<b>OECD Harmonized Template:</b>	Autoflammability			
<b>HERO ID:</b>	8404084			
EXTRACTION				
Parameter	Data			
Auto-flammability	> 200 - C			
CASRN and Test Material	1222-05-5; HHCB			
Confidentiality, Type, and Guideline	none; estimated; non-guideline			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR			
System	estimation based on structure and physical data comparison			
Standard Deviation Results	not reported			
Results Details	not reported			
Results Value	not reported			
EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.	
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.	
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.	
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.	
Domain 3: Other	Metric 5: Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.	
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Quality Determination		Medium		

<b>Study Citation:</b>	IFF, (2014). Final report: Determination of the auto-ignition temperature (liquid) of HHCB (multi-constituent) (sanitized).
<b>OECD Harmonized Template:</b>	Autoflammability
<b>HERO ID:</b>	8789316

**EXTRACTION**

Parameter	Data
Auto-flammability	355 C
CASRN and Test Material	1222-05-5; 4,6,6,7,8,8-hexamethyl-1,3,4,6,7,8-hexahydrocyclopenta[g]isochromene
Confidentiality, Type, and Guideline	none; experimental; EC 440/2008 A.15; DIN 51794; IEC standard 79-4
Solvent, Reactivity, Storage, and Stability	NR; NR; room temperature in the dark; NR
Radiolabel, Source, State, and Purity	NR; NR; clear colourless viscous liquid; 97.3% Notes: multi-constituent (CAS 252933-49-6; CAS 252933-48-5)
System	auto-ignition temperature apparatus
Standard Deviation Results	maximum deviation between 3 values recorded was <20C
Results Details	Three tests run, minimum auto-ignition temperatures were 360, 356, and 361C. (Orange flame; volumes tested ranged from 70-350 µL)
Results Value	The lowest value recorded (356°C) was rounded down to 355°C as the auto-ignition temperature; pressure: 1011.3-1011.7 hPa

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2: Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Viscosity
<b>HERO ID:</b>	5926119

EXTRACTION	
Parameter	Data
Viscosity	12,914
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	12,914 mPa.S

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

**High**

\* Related References: ECHA. 2018. Search for Chemicals. 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexymethylindeno[5,6-s]pyran. (1222-05-5). Registered Substances Dossier. European Chemical Agency.

<b>Study Citation:</b>	Elsevier, (2019). Reaxys: physical-chemical property data for galaxolide. CAS Registry Number: 1222-05-5..
<b>OECD Harmonized Template:</b>	Refractive Index
<b>HERO ID:</b>	5932798

**EXTRACTION**

Parameter	Data
Refractive Index	1.535 - 1.5359
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	20°C; 2 data points were reported in Reaxys; 2 values were reported in the range of 1.535 to 1.5359 at 20°C.
Results Details Methods	Not Reported
Parameter	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance			
	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability			
	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other			
	Metric 5: Databases	High	Data is from a secondary database with a references to the peer-reviewed original source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: Data determined from multiple primary sources in REAXYS.



<b>Study Citation:</b>	NLM, (2018). PubChem: Hazardous Substance Data Bank: Galaxolide, 1222-05-5.
<b>OECD Harmonized Template:</b>	Refractive Index
<b>HERO ID:</b>	5926119

**EXTRACTION**

Parameter	Data
Refractive Index	1.5342
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported
Parameter	Not Reported

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4: Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5: Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

\* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 871.

<b>Study Citation:</b>	O'Neil, M. J. (2013). HHCB. 1222-05-5. :871-872.
<b>OECD Harmonized Template:</b>	Refractive Index
<b>HERO ID:</b>	5926383

EXTRACTION	
Parameter	Data
Refractive Index	1.5342
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

<b>Study Citation:</b>	Balk, F., Ford, R. A. (1999). Environmental risk assessment for the polycyclic musks AHTN and HHCB in the EU. I. Fate and exposure assessment. Toxicology Letters 111(1-2):57-79.
<b>OECD Harmonized Template:</b>	Henry's Law
<b>HERO ID:</b>	5349126

**EXTRACTION**

Parameter	Data
Henry's Law	11.3 Pa.m3/mol
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; calculation; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	not applicable
pH	not applicable
System	Technical Guidance Documents (TGD) for New and Existing Substances (EC, 1996).
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	calculated using molecular weight, vapor pressure and measured solubility in water.

**EVALUATION**

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2: Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4: Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other	Metric 5: Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

**Overall Quality Determination****High**

<b>Study Citation:</b>	ECB, (2008). European Union risk assessment report: 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran (HHCB).
<b>OECD Harmonized Template:</b>	Henry's Law
<b>HERO ID:</b>	5155574

EXTRACTION	
Parameter	Data
Henry's Law	36.9 - Pa m <sup>3</sup> /mol
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	25 C
pH	Not Reported
System	Equilibrium partitioning in closed system and SPME
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported

EVALUATION				
Domain	Metric	Rating	Comments	
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

\* Related References: cited from Artola-Garciana E (2002). Distribution behaviour of polycyclic musks in sewage treatment plants and in biota. Interpretation of data using free and total concentration measurements. Thesis at Institute for Risk Assessment Sciences IRA, Utrecht, The Netherlands. (HERO ID 5349125 )

<b>Study Citation:</b>	ECB, (2008). 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta- $\gamma$ -2-benzopyran, (1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno[5,6-c]pyran - HHCB) summary risk assessment report.
<b>OECD Harmonized Template:</b>	Henry's Law
<b>HERO ID:</b>	8404084

EXTRACTION	
Parameter	Data
Henry's Law	36.9 - Pa m <sup>3</sup> /mol
CASRN and Test Material	1222-05-5; HHCB
Confidentiality, Type, and Guideline	none; experimental; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25C
pH	not reported
System	equilibrium partitioning in closed system and SPME
Standard Deviation Results	not reported
Results Details	not reported
Results Details Methods	SPME

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

## Overall Quality Determination

## High

<b>Study Citation:</b>	NCBI, (2020). PubChem compound summary for CID 91497, Galaxolide.
<b>OECD Harmonized Template:</b>	Henry's Law
<b>HERO ID:</b>	6629630

EXTRACTION	
Parameter	Data
Henry's Law	36.8 Pa-cu m/mol
CASRN and Test Material	1222-05-5; Galaxolide
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25°C
pH	Not reported
System	Not reported
Standard Deviation Results	Not reported
Results Details	36.8 Pa-m3/mol at 25°C
Results Details Methods	Not reported

EVALUATION			
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High
	Metric 2:	Appropriateness	High
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium
	Metric 4:	Reliability/Analytical Method	Medium
Domain 3: Other	Metric 5:	Databases	Low
	Metric 6:	Models	N/A

## Overall Quality Determination

**Medium**

\* Related References: ECHA; Search for Chemicals. 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexmethylindeno 5,6-s]pyran. (1222-05-5) Registered Substances Dossier. European Chemical Agency. Available from, as of Jun 7, 2018: <http://echa.europa.eu/>

<b>Study Citation:</b>	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.
<b>OECD Harmonized Template:</b>	Miscellaneous
<b>HERO ID:</b>	6967359

EXTRACTION	
Parameter	Data
CASRN	1222-05-5
Confidentiality, Type, and Guideline	None; Experimental; Non-guideline: Gas chromatography retention time GC-RT method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Sigma-Aldrich; NR; >85% Notes: NR
Value	7.85 - 7.93
Temperature	estimated at 298K; experimental: 343-363 K (69.85-89.85°C)
System	GC-RT assumes the chromatographic retention time is inversely proportional and proportional to its temperature dependent octanol–air partition coefficient (Koa)
pH	Not reported
Standard Deviation Results	±0.23 (standard prediction uncertainty estimated at K = 298)
Results Details	Log octanol–air partition coefficient (Koa) = 7.85 (calibrated) and 7.93 (uncalibrated)

EVALUATION				
Domain	Metric		Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint; r2 = 0.983.

## Overall Quality Determination

## High

## List of Abbreviations and Acronyms for Data Quality Evaluation and Extraction Tables

Term	Definition
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
atm	Atmospheres
atm · m <sup>3</sup> /mol	Atmospheres - cubic meters per mole
C	Celsius
CASRN	Chemical Abstract Service registry number
cP	Centipoise
CRC	CRC Handbook of Chemistry and Physics
DOE	U.S. Department of Energy
ECB	European Chemicals Bureau
EPA	Environmental Protection Agency
F	Fahrenheit
GC	Gas Chromatography
g/cm <sup>3</sup>	Grams per cubic centimeter
GLP	Good Laboratory Practice
HLC	Henry's Law Constant
HPV	High Production Volume
HSDB	Hazard Substance Data Bank
ILO	International Labour Organization
IPCS	International Programme on Chemical Safety
IUCLID	International Uniform Chemical Information Database
K	Kelvin
K <sub>oa</sub>	Octanol-Air partition coefficient
K <sub>ow</sub>	Octanol-Water partition coefficient
mg/L	Milligrams per Liter
mol	Mole
mmHg	Millimeters of Mercury
MS	Mass Spectrometry
N/A	Not Applicable
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NLM	National Library of Medicine
NR	Not Reported
OECD	Organisation for Economic Co-operation and Development
Pa (hPa)	Pascals (hectopascals; 1 hPa = 100 Pa)
pH	Negative base 10 Log of Hydrogen Ion (H <sup>+</sup> ) Concentration in Aqueous Solution
pK <sub>a</sub>	Negative base 10 Log of Acid Dissociation Constant (K <sub>a</sub> )
RIVM	National Institute for Public Health and the Environment (Dutch: Rijksinstituut voor Volksgezondheid en Milieu)

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Term	Definition
RSC	Royal Society of Chemistry
RT	Retention Time
SIDs	Screening Information Dataset
VP	Vapor Pressure
US or USA	United States of America
UV (UV-Vis)	Ultra Violet (UV-Visible)
WHO	World Health Organization