

**674824****Lot: 818513****Esfenvalerate**1. General Information

Formula	C <sub>25</sub> H <sub>22</sub> ClNO <sub>3</sub>	Expiry Date	01 May 2028
<b>Mol. Weight</b>	<b>419.90 g/mol</b>	Store at	20°C (in the dark)
CAS-No.	66230-04-4		

2. Batch Analysis

Identity	confirmed by GC-MS		
<b>Overall Purity</b>	<b>98.81 % (g/g)</b>	<b>Expanded Uncertainty</b>	<b>0.48 % (g/g)</b>
Assay Purity (GC)	98.81 % (g/g)	Uncertainty	0.24 % (g/g)

Certified on 28 Apr 2023

by Jacqueline Seidel  
RM ReleaseThe overall purity is calculated by:  $\text{Purity(\%)} = \frac{\text{Assay purity} \times (100 - \text{water content} - \text{impurities})}{100}$ 

The reported uncertainties are determined in accordance with ISO 17034 with a 95% confidence level ( $k=2$ ). The Uncertainty is based on the combined uncertainties, including uncertainties of characterization and stability testing. The expiry date is based on the current knowledge and holds only for proper storage conditions in the originally closed flask. If the substance is proven to be unstable under the given storage conditions, you will be contacted immediately. The warranty of this product is limited to the purchasing price of this product and to the first point of use.

Our standards are for laboratory use only and can be used as reference material for calibration of chromatographic systems or related analytical techniques. For handling instructions see the MSDS. A minimum sample of 2 mg is recommended. Deploying less material will increase the uncertainty by a factor 2 for half of sample and 4 for a quarter of sample. The material in the vial can be used multiple times, but it is strongly recommended that all external negative influences to the material are considered and ruled out (e.g. high temperatures, UV-radiation, moisture, oxygen). It is strongly recommended to open the vial at room temperature only and handle the material under inert gas if necessary. The integrity of the purity cannot be guaranteed if the substance is handled under unfavorable conditions.

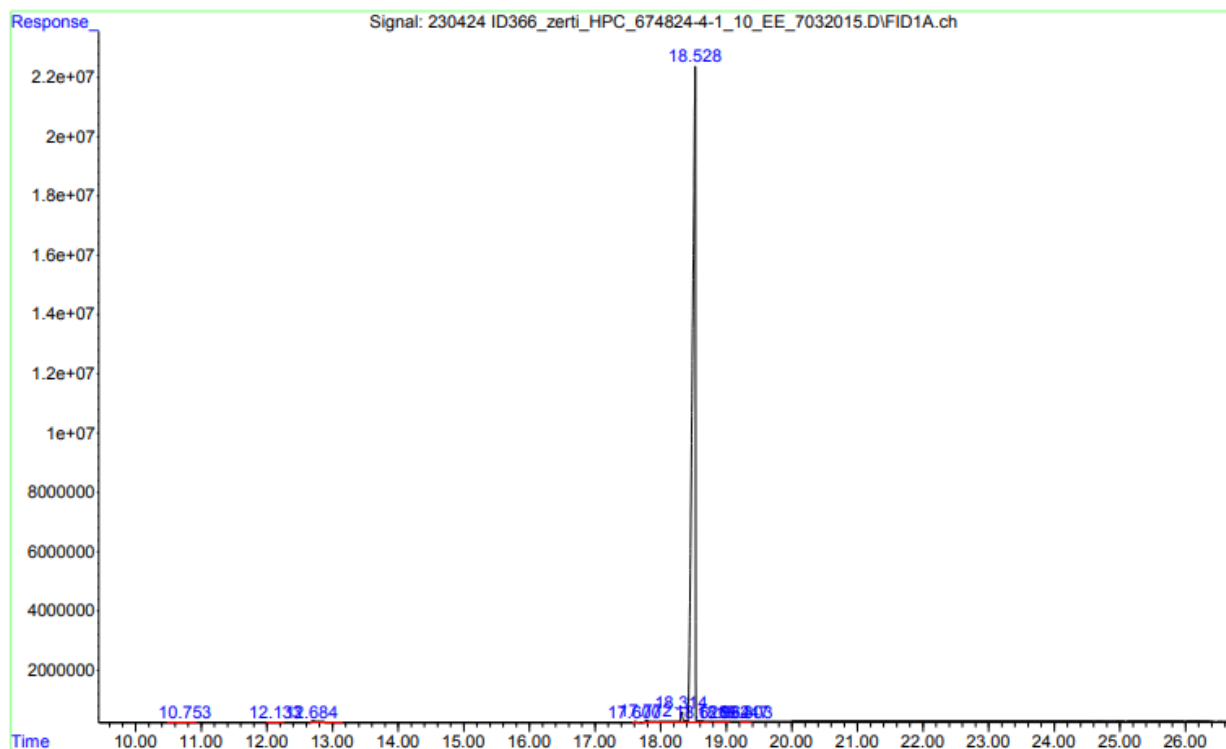
The balances used are calibrated with weights traceable to the national standards (DKD).

The HPC Standards GmbH produces reference materials according to ISO 17034. For further information, check:



**GC-Method**

Article	674824	Inj.-temp.	250°C
Lot-No.	818513	Oven-temp.	70-320°C
Column	HP5, 30 m, 0.32 mm	Split	1:10
Flow	2.0ml min -1	Inj.-Volume	1 µl
Detector	FID	Sample	10.0 mg ml-1 (Ethylacetate)



Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	10.753	10.477	10.910	BV	2025	113116	0.02%	0.015%
2	12.133	11.990	12.235	BV	2029	66605	0.01%	0.009%
3	12.684	12.650	13.130	PV	19395	1073449	0.15%	0.146%
4	17.600	17.567	17.662	PV	7534	103434	0.01%	0.014%
5	17.772	17.715	18.269	M	58417	1047129	0.14%	0.142%
6	18.314	18.284	18.398	M	314078	6446276	0.89%	0.876%
7	18.528	18.400	18.593	M22132905	726214061	726214061	100.00%	98.705%
8	18.626	18.595	18.754	VV	14927	513964	0.07%	0.070%
9	18.964	18.807	19.034	M	3202	102942	0.01%	0.014%
10	19.247	19.217	19.284	VV	1940	36533	0.01%	0.005%
11	19.303	19.284	19.367	VV	1425	26373	0.00%	0.004%

Sum of corrected areas: 735743882

Exemplary chromatogram of given method.

Version	Article	Lot	Reason for Change	Date
1	674824	818513	Initial Version	28 Apr 2023
2	674824	818513	Text update	08 Jun 2023