Boundary Composition in Lead Registrant Dossier

Substance: disodium molybdate

EC Number 231-551-7

Type of substance: mono-constituent

Remark: The predominant form on the market of sodium molybdate is the dihydrate. Hydrated and anhydrous forms are considered the same substance under REACH, and formally the registration is under the EC number 231-551-7 for the anhydrous form. To include the dihydrate form, the lead dossier contains TWO boundary compositions, for both the anhydrous and dihydrate form. Both forms have the same EC number in the EC inventory, but different CAS numbers

Name of boundary composition 1: "Boundary composition: sodium molybdate (anhydrous)"

State / form: solid: particulate/powder

Description of composition: This boundary composition is for anhydrous sodium molybdate.

Degree of purity >= 98 <= 100 % (w/w)

	typical % (w/w)	min % (w/w)	max % (w/w)	Selected Substance References EC number	CAS number	Impurities Relevant for C&L	Remarks
Constituents							
disodium molybdate	99.8	>= 98	<= 100	231-551-7	7631-95-0		
Impurities							
water	<= 0.2	>= 0	<= 2	231-791-5	7732-18-5	no	Water concentration is normally extremely low, if any at all.
unknown impurities	<= 0.2	>= 0	<= 0.2	-	-	no	No individual impurity is present at >= 1 % (w/w). No impurity relevant for classification and labelling or PBT/vPvB is present at >= 0.1 %, or above other generic or specific concentration limits.
Additives							
-							

Name of boundary composition 2: "Boundary composition: sodium molybdate dihydrate"

State / form:	solid: particulate/powder						
Description of composition:	This boundary composition is for sodium molybdate dihydrate.						
Degree of purity	>= 98	<= 100	% (w/w)				
	typical % (w/w)	**min** % (w/w)	**max** % (w/w)				
				selected references substance		impurity relevant for C&L	remarks
Constituents				EC number	CAS number		
disodium molybdate dihydrate	99.8	>= 98	<= 100	231-551-7	10102-40-6		
Impurities							
water	<= 0.2	>= 0	<= 2	231-791-5	7732-18-5	no	Water concentration is normally extremely low, if any at all. No individual impurity is present at >= 1 % (w/w). No impurity relevant for classification and labelling or PBT/vPvB is present at >= 0.1 %, or above other generic or specific concentration limits.
unknown impurities	<= 0.2	>= 0	<= 0.2	-	-	no	
Additives							
-							

https://echa.europa.eu/support/qas-support/browse/-/qa/70Qx/view/scope/REACH/REACH+Registration

Is a metal hydroxide manufactured from the metal oxide covered by the exemption from registration in Annex V, point 6 of the REACH Regulation?

According to Annex V, point 6 of the REACH Regulation hydrates of a substance or hydrated ions, formed by association of a substance with water are exempted from registration, provided that the substance (i.e. the anhydrous form) has been registered by its manufacturer or importer.

Hydrates of a substance are characterised by the fact that water molecules are linked by molecular interactions, in particular by hydrogen bonds, to other molecules or ions of the substance. For the purposes of Annex V, hydrates and water free forms (anhydrous) of compounds shall be regarded as the same substance (e.g. CuSO4.5H2O and CuSO4).

In contrast, a metal hydroxide (e.g. Ca(OH)2) and a metal oxide (e.g. CaO) cannot be regarded as the same substance as both substances have different structures, regardless of the manufacturing process. The formation of the hydroxide involves forming new covalent bonds, which is different from forming a hydrate which only involves weak intermolecular bonds. Therefore a metal hydroxide manufactured from the metal oxide is not covered by the exemption from registration in Annex V, point 6.