



ID Card

Silver carbonate

Version 4 July 2023

Notes:

- This ID card is used to support the substance sameness discussions and to describe the substance to the best of the members' knowledge.
- It aims at grouping communications relevant to the request of available data or information.
- It is the responsibility of each individual registrant to identify their substance and to report company-specific identity in their Registration Dossier (section 1 of IUCLID).

DISCLAIMER

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1. Identification of the substance

Table 1. Identification of the substance

	Original (in EC inventory)
Name	Silver carbonate
EC number	208-590-3
CAS number	534-16-7
Description	Not available
Composition type	Mono-constituent substance

2. Synonyms and other identifiers of the substance

Table 2. Synonyms and other identifiers of the substance

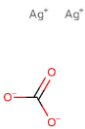
IUPAC name	Disilver (1+) carbonate
CAS name	Carbonic acid, silver (1+) salt (1:2)
Abbreviations	None
Other commercial, brand or international names	Silver(I) carbonate
Other identity codes	None

3. Substance (with core identifiers) also falling under this substance (with justification)

None

4. Information related to molecular and structural formula of the substance

Table 3. Information related to molecular and structural formula of the substance

Molecular formula	Ag ₂ CO ₃
Structural formula	
Smiles notation	[Ag+].[Ag+].[O-]C(=O)[O-]
Optical activity	Not applicable
Typical ratio of (stereo) isomers	Not applicable
Molecular Weight / Molecular Weight range	275.745 g/mol

5. Typical composition of the substance

Table 4. Typical composition

	Name	Symbol / Formula	Min & Max concentrations (%)	Typical concentration (%)
Main constituent(s)	Silver carbonate	CH ₂ O ₃ .2Ag	80 - 100	> 99,5
Impurity(ies)	Chlorides	Cl-	0 - 20	< 0,5
	Nitrates	NO ₃	0 - 20	< 0,5
	Sulphates	SO ₄	0 - 20	< 0,5
	Carbon dioxide	CO ₂	0 - 20	< 0,5
	Copper	Cu	0 - 20	< 0,5
	Iron	Fe	0 - 20	< 0,5
	Lead	Pb	0 - 20	< 0,5
	Nickel	Ni	0 - 20	< 0,5
	Sodium	Na	0 - 20	< 0,5
	Other	N/A	0 - 20	< 0,5

Silver carbonate can be manufactured in the form of fine or coarser powders. All forms will be addressed in the same Registration Dossier.

The composition given above is typical and should therefore represent the majority of Silver carbonate as placed on the EEA market. Silver carbonate containing less than 99,5 % Silver carbonate will be referred to as impure Silver carbonate.

6. Information on appearance, physical state and properties of the substance

Table 5. Appearance / physical state / properties of the solid substance

Physical state	Solid
Physical form*	Powder
Appearance	White to grey
Particle size**	Coarse powder
Does the substance contain 'bound water'?#	No
Does the substance contain 'crystallisation water'?#	No
Does the solid hydrolyse?##	No
Is the solid hygroscopic?§	Yes

* Crystalline form: solid material whose constituent atoms, molecules, or ions are arranged in an ordered pattern extending in all three spatial dimensions. Amorphous form: solid material whose constituent atoms, molecules, or ions are randomly arranged.

** Nanoform: particles in the size range 1 - 100 nm (for full definition of a nanomaterial, see <http://ec.europa.eu/environment/chemicals/nanotech/index.htm#definition>). Fine powder: particles in the size range 100 - 2.500 nm. Coarse powder: particles in the size range 2.500 nm - 1 mm. Massive object: particles in the size range > 1 mm.

'Bound water': water molecules that are coordinated as bound ligands. 'Crystallisation water' or hydration water: water that occurs in crystals (necessary for the maintenance of crystalline properties) but which is not directly bound to the metal ion (a hydrate contains a definite % of crystallisation water e.g. $\text{CuSO}_4 \times 5 \text{H}_2\text{O}$, an anhydride does not contain any water)

Hydrolysis: decomposition (cleavage of chemical bonds) by the addition of water.

§ Hygroscopic substance: readily attracts moisture from its surroundings in open air, through either absorption or adsorption. Cf. also water/moisture content under section 5.

7. Analytical data

Annex VI of REACH requires the registrant to describe the analytical methods and/or to provide the bibliographical references for the methods used for identification of the substance and, where appropriate, for the identification of impurities and additives. This information should be sufficient to allow the methods to be reproduced.

Table 6. Analytical methods for identification of the substance

Parameter / Method	Recommended for substance identification and sameness check	Applicable	Not applicable or not recommended
Elemental analysis			
ICP (ICP-MS or ICP-OES)	X		
Atomic absorption spectroscopy (AAS)			
Glow discharge mass spectrometry (GDMS)			



Molecular analysis			
Infrared (IR) spectroscopy	X		
Raman spectroscopy	X		
Mineralogical analysis			
X-Ray Fluorescence (XRF)			
X-Ray Diffraction (XRD)	X		
Morphology and particle sizing			
Electron microscopy (SEM, TEM, REM)* #			
Laser diffraction* #	X		
Particle size by other means (e.g. sieve analysis)#			
Surface area by N-BET* #			
Other			

* Analytical techniques particularly (but not exclusively) relevant for nanomaterials.

The choice of the technique for particle size depends on the size of the material as manufactured/imported/placed on the market/used.

8. Lead Registrant

Saxonia (Germany) is the Lead Registrant for Silver carbonate. The European Precious Metals Federation (EPMF) will provide support to the Lead Registrant as laid down in the EPMF Agreement.

9. Scope of the Registration Dossier

The uses included in this Registration Dossier are listed on the [EPMF website](#).