



# 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**

All data and information contained in this document shall be treated by the receiving party (i) in full confidence with the adequate respect of any confidential and/or proprietary nature of such information and (ii) only in the framework of the purpose of agreeing on substance sameness, Lead Registrant and overall REACH Strategy for the concerned Substance under REACH (the 'Purpose').

The receiving party (and any representative) shall not be allowed to use or circulate any or all parts of this document for any other purpose than the Purpose, without the prior written consent of the European Precious Metals Federation (EPMF).

The content provided in this document is given for the Purpose and as such, no guarantee or warranty whatsoever (expressed or implied) is given as to its accuracy, completeness, merchantability or fitness for any particular purpose which the receiving party may have. In any case, any use by the receiving party would be made at its sole risk and liability.

## 1. Identification of the substance

**Table 1.** Identification of the substance

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

## 2. Synonyms and other identifiers of the substance

**Table 2.** Synonyms and other identifiers of the substance

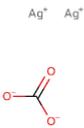
<b>IUPAC name</b>	Disilver (1+) carbonate
<b>CAS name</b>	Carbonic acid, silver (1+) salt (1:2)
<b>Abbreviations</b>	None
<b>Other commercial, brand or international names</b>	Silver(I) carbonate
<b>Other identity codes</b>	None

### 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**

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

### 5. Typical composition of the substance

**Table 4. Typical composition**

	<b>Name</b>	<b>Symbol / Formula</b>	<b>Min &amp; Max concentrations (%)</b>	<b>Typical concentration (%)</b>
<b>Main constituent(s)</b>	Silver carbonate	CH <sub>2</sub> O <sub>3</sub> .2Ag	80 - 100	> 99,5
<b>Impurity(ies)</b>	Chlorides	Cl-	0 - 20	< 0,5
	Nitrates	NO <sub>3</sub>	0 - 20	< 0,5
	Sulphates	SO <sub>4</sub>	0 - 20	< 0,5
	Carbon dioxide	CO <sub>2</sub>	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**

<b>Physical state</b>	Solid
<b>Physical form*</b>	Powder
<b>Appearance</b>	White to grey
<b>Particle size**</b>	Coarse powder
<b>Does the substance contain 'bound water'?#</b>	No
<b>Does the substance contain 'crystallisation water'?#</b>	No
<b>Does the solid hydrolyse?##</b>	No
<b>Is the solid hygroscopic?§</b>	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
<b>Elemental analysis</b>			
ICP (ICP-MS or ICP-OES)	X		
Atomic absorption spectroscopy (AAS)			
Glow discharge mass spectrometry (GDMS)			



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

\* 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](#).