



# ID Card

## Potassium Dicyanoargentate

Version 7 February 2017

### Notes:

- This ID card is used to support the substance sameness discussions in SIEFs and to describe the substance to the best of the SIEF members' knowledge.
- It also aims at grouping communications relevant to the request of available data or information, the approval of the proposed Lead Registrant and the registration strategy with the SIEF.
- 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	Potassium Dicyanoargentate
EC number	208-047-0
CAS number	506-61-6
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	Potassium silver(1+) cyanide (1:1:2)
CAS name	Silver potassium cyanide
Abbreviations	



<b>Other commercial, brand or international names</b>	Potassium silver cyanide Bis(cyano) potassium argentite Argentate(1-), bis(cyano-C)-, potassium Argentate(1-), dicyano-, potassium
<b>Other identity codes</b>	EINECS 208-047-0

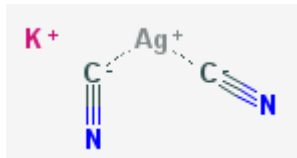
### 3. Substances (with core identifiers) also falling under this substance (with justification)

**Table 3. Substances also falling under this substance**

Name	EC number	CAS number	Justification

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

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

<b>Molecular formula</b>	KAg(CN) <sub>2</sub>
<b>Structural formula</b>	
<b>Smiles notation</b>	[C-]#N.[C-]#N.[K+].[Ag+]
<b>Optical activity</b>	
<b>Typical ratio of (stereo) isomers</b>	
<b>Molecular Weight / Molecular Weight range</b>	199,0 g/mol

### 5. Typical composition of the substance

**Table 5. Typical composition**



	Name	Symbol / Formula	Min & Max concentrations (%)	Typical concentration (range) (%)
<b>Main constituent(s)*</b>	Potassium Dicyanoargentate	K[Ag(CN)2]	99,0 – 100	99,8
<b>Additive(s)**</b>				
<b>Main impurity(-ies)#</b>	Other metals eg Al, Cu, Fe	N/A	0 – 1,0	≤ 0,1
	Other eg Si, Ca, Na	N/A	0 – 1,0	≤ 0,1
	Mg, Ni, Zn	N/A	0 – 1,0	≤ 0,1
<b>Other impurities##</b>	Cr, Pb	N/A	0 – 0,01	≤ 0,01
	Moisture	N/A	0 – 1,0	≤ 0,1

\* ≥ 80 % (w/w) for mono-constituent substances; ≥ 10 % (w/w) and < 80 % (w/w) for multi-constituent substances.

\*\* ≥ 1 % (or lower if contributing to the hazard). An additive is a substance that has been intentionally added to stabilise the substance and which cannot be removed without changing the chemical nature to which it is added.

# ≥ 1 %. An impurity is an unintended constituent present in a substance, as produced. It may originate from the starting materials or be the result of secondary or incomplete reactions during the production process. While impurities are present in the final substance, they were not intentionally added.

## < 1 % and potentially influencing the classification of the substance.

The composition given above is typical and should therefore represent the majority of Potassium Dicyanoargentate as manufactured and/or imported in the EEA market. Potassium Dicyanoargentate containing less than 99,8% Potassium Dicyanoargentate may still be considered to be the same for the purpose of registration under REACH and may be referred to as impure Potassium Dicyanoargentate to distinguish it from the typically pure Potassium Dicyanoargentate.

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

**Table 6. Appearance / physical state / properties of the solid substance**

Physical state	solid
Physical form*	crystalline



Appearance	white powder
Particle size**	fine powder
Does the substance contain 'bound water'?#	no
Does the substance contain 'crystallisation water'?#	no
Does the solid hydrolyse?##	no
Is the solid hygroscopic?§	no

\* 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 definition of a nanomaterial, see [http://ec.europa.eu/environment/chemicals/nanotech/faq/definition\\_en.htm](http://ec.europa.eu/environment/chemicals/nanotech/faq/definition_en.htm)). 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.

**Table 7. Appearance / physical state / properties of the substance in solution\***

Physical state	Solution
Solvent	Water, ethanol
Concentration range of substance in solution	Max. 143,8 g/L (in water)
pH (range) of the solution	9-11 (50g/L)
Excess acid	

\* For liquid substances (solvent cannot be separated from substance without changing the identity of the substance) and not for mixtures, suspensions, and other non-substance forms in which the substance is manufactured and/or imported under REACH .

## 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 8. 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 (impurities)		
Atomic absorption spectroscopy (AAS)			
Glow discharge mass spectrometry (GDMS)		X (impurities)	
Potentiometric analysis	X (Ag)		
<b>Molecular analysis</b>			
Infrared (IR) spectroscopy		X (KAgCN)	
Raman spectroscopy			
<b>Mineralogical analysis</b>			
X-Ray Fluorescence (XRF)			
X-Ray Diffraction (XRD)		X (KAgCN)	
<b>Morphology and particle sizing</b>			
Electron microscopy (SEM, TEM, REM)* #			
Laser diffraction* #			
Particle size by other means (e.g. sieve analysis)#		X (KAgCN)	
Surface area by N-BET* #			
<b>Other</b>			

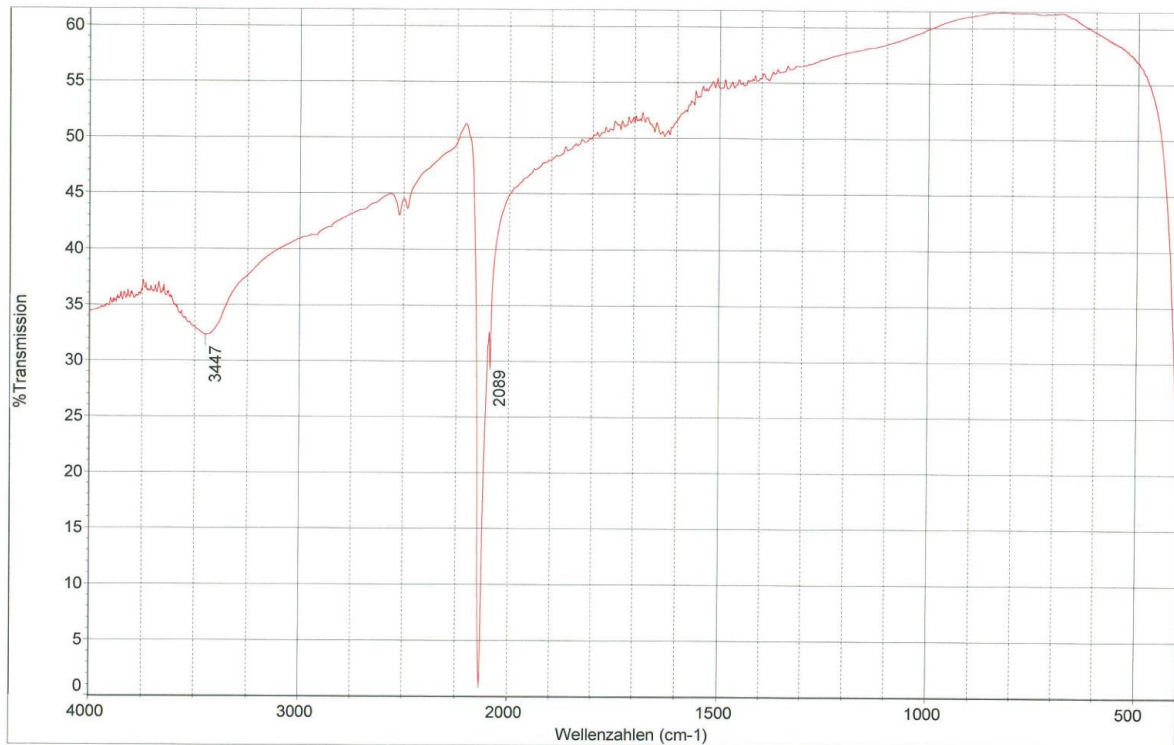
\* Analytical techniques particularly (but not exclusively) relevant for nanomaterials.

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



## Potassium Dicyanoargentate - Analytical Reference Information

### IR spectra of Potassium dicyanoargentate



9796\_4 Kaliumsilbercyanid in KBr

Mo Mai 30 16:45:55 2016 (GMT+02:00)

## 8. Lead Registrant

SAXONIA Edelmetalle GmbH (Germany) volunteers to be the Lead Registrant for Potassium Dicyanoargentate. The EPMF will provide support to the Lead Registrant as laid down in the EPMF Agreement.

## 9. REACH Strategy

The table below presents the overall Registration Strategy for Potassium Dicyanoargentate based on the information available to the EPMF by the date given above on the document.

The Registration Dossier will be prepared for the highest substance status (information requirements associated to a substance or Article 10 Registration being higher than an intermediate handled under strictly controlled conditions or Article 17 or 18 one) and associated tonnage band.

The recap below therefore reflects the scope of work of the EPMF for Potassium Dicyanoargentate and sets the minimum and maximum set of information that will be gathered and/or produced when preparing the Registration Dossier for Potassium Dicyanoargentate as described in this ID Card.



If higher information requirements are necessary, these can be included in the Registration dossier (if EPMF is made aware of these additional requirements in-time) as an update to the already submitted dossier.

**Table 9. REACH strategy for the substance (basis for REACH Registration preparation)**

Item	Description
REACH category	Mono-constituent substance
Highest status	Substance
Highest tonnage band	10 - 100
Information requirements	Available / Existing + Annex VII - VIII
Existing classification*	Met. Corr. 1 (H290) EUH032: contact with acids liberates very toxic gas Acute tox. 2 (H330) Acute tox. 1 (H310) Acute tox. 2 (H300) Skin Corr. 1A (H314) Eye dam. 1 (H318) Aquatic acute 1 (H400) Aquatic chronic 1 (H410)
Registration deadline	2018

\* For the pure form, as per latest CLP notification exercise (December 2010 & March 2012)

## 10. Scope of the Registration Dossier

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