To whom it may concern at ECHA

Brussels November 2023

Dear Madam/Sir,

We would like to comment on the Proposal for Harmonized Classification and Labelling for Silver nitrate (EC 231-853-9; CAS 7761-88-8).
These comments are submitted on behalf of the Umicore group including the following legal entities: Umicore NV/SA, Agosi AG, Österreichische Gold- und Silber-Scheideanstalt Ges.m.b.H and Todini Deutschland Gmbh.

Umicore is a global materials technology and recycling group serving a wide range of industries. At Umicore we import and use silver nitrate for many applications.

In Hoboken, the Umicore Precious Metals Refining (Umicore NV/SA) operates as one of the world's largest precious metals recycling facilities. This business unit of Umicore is the world market leader in recycling complex waste streams containing precious and other non-ferrous metals.
Silver nitrate is an irreplaceable intermediate in our precious metals flowsheet, as it facilitates the separation between silver and PGM refining.

The Business Unit JIM (Jewelry and Industrial Metals) precious metal produces standard and special products from precious metals, semi-finished or near-end, precious metal based alloys for industrial applications and crafts. Precious metals are recycled from various scrap materials and made available for production.
At Agosi AG, silver nitrate is used as electrolyte in the electrowinning with two separated processes as essential parts of the silver refining process. The refining of silver is the most important precious metals recycling process part at the Agosi AG. There is no substitution of silver nitrate in the silver refining process possible.
At Österreichische Gold- und Silberscheideanstalt Ges. m.b.H silver nitrate in solution is part of the precious metals recycling process.

Umicore Cobalt & Specialty Materials is a worldwide leader in the recycling, refining, transformation and marketing of metal-based specialty chemicals, with a main focus on cobalt and nickel. Their broad expertise covers a multitude of applications in both chemicals and powder metallurgy. As part of the Cobalt & Specialty Materials unit, a trading branch named Todini focuses on worldwide reselling of metal-based specialty chemicals both from internal and external sources to a variety of applications. The entity Todini Deutschland Gmbh is active in trading of Silver nitrate, with its main downstream user applications being the production of mirrors, textiles (silver nitrate is used for its antiseptic properties) or for surface treatment and chemical analyses and synthesis.

Silver nitrate is often, as it is in Umicore, processed as part of the wider precious metals refining process, therefore changes to the classification of silver nitrate could have negative knock-on effects on the entire precious metal refinery sector and refining processes put in place.

If uses of silver nitrate would be reduced, this would be translated first in a cost of refining silver, and potentially triggering a non-recycling of some materials (which may be then landfilled instead of recycled), to finally a reduction of precious metals found in the incoming material. Ultimately this would impact manufacturers/importers and would break the closed recycling loop that is currently in place.

Umicore supports the scientific comments submitted by the European Precious Metals Federation (EPMF). Here are the key messages and arguments addressed in EPMF's comments that we would like to share with you:

1. **Data sources**: the selection of studies for the hazard assessment of silver nitrate should consider only relevant and reliable studies. As detailed in the CLH Report for silver nitrate, the silver ion is considered the relevant toxic moiety for mammalian and environmental endpoints. Data from silver metal (incl. nanosilver) and other Silver Containing Active Substances should not be used.

2. **Oxidising solids**: Experimental data are available for test items with various particle sizes. These data suggest that particle size plays an important role in the classification for this endpoint with finer materials being more potent oxidizers than courser materials. The currently included classification entry under EU-REACH includes a conservative cut-off size to distinguish between Oxid. Solid 1 (D10<250 µm) and Oxid. Solid 2 (D10>250 µm). The EPMF however acknowledges that this assessment is based on a limited amount of experimental data. Therefore, additional testing is currently ongoing to clarify and/or refine this classification. The re-assessment of this endpoint will be performed asap after data provision by the CRO (expected end 2023) and the Silver nitrate IULCID file under EU REACH will be updated accordingly.

3. **Acute toxicity – oral**: based on the existing experimental subacute test data with silver nitrate, subacute to subchronic test data with silver acetate and acute toxicity data with other silver compounds (including a soluble silver compound), silver nitrate should not be classified for Acute toxicity – oral route.

4. **Skin corrosion/irritation**: Reliable in vitro studies are available for skin irritation/corrosion potential of silver nitrate. Based on these studies, silver nitrate is corrosive to the skin and a self-classification as Skin Corr. 1A (H314) is included under EU REACH. However, it is recognised that the peer reviewed publications do not provide details on the silver nitrate test items (like particle size). It is suggested that particle size might play a role in the corrosion hazard potential. Therefore, the EPMF is currently performing additional in vitro testing (OECD 435 and 431, GLP compliant) with silver nitrate in three distinct particle sizes. Based on this experimental data (expected towards end 2023), a re-assessment of the skin corrosion potential of silver nitrate will be performed to verify if a Skin corr 1A (self-classification under EU REACH) or 1B classification (existing harmonised classification in CLP Annex VI) is most appropriate. This assessment will be performed asap after data provision by the CRO and the Silver nitrate IULCID file under EU REACH will be updated accordingly.

5. **Skin sensitisation**: the present CLH report refers to the same dataset than the one provided to and discussed by the RAC for silver metal and silver zinc zeolite, and should also be void of a classification of silver nitrate for skin sensitisation.

6. **Germ cell mutagenicity**: the present CLH report refers to roughly the same dataset than the one provided to and discussed by the RAC for silver metal. In line with the presented read-across approach for silver nitrate, and by considering today's available relevant and reliable data, silver nitrate should be void of a classification for germ cell mutagenicity. It is recognised that the positive signal in a mammalian cell gene mutation assay requires further investigation in order to clarify the potential for simple ionic silver substances to induce point mutation in mammalian cells. However, the performance of a follow-up *in vivo* assay is postponed until the outcome of the ongoing 2-year carcinogenicity assay is known (cfr. next point), in line with the EU REACH requirements.

7. **carcinogenicity**: There is an ongoing OECD453 and GLP compliant study with silver acetate (Charles River Den Bosch, NL). The in-life phase will be terminated in November-December 2023 and a draft report is expected mid-2024. This study will inform about the carcinogenic potential of silver acetate and, via read-across, also silver nitrate.

8. **Reproductive toxicity**: the present CLH report refers to roughly the same dataset than the one provided to and discussed by the RAC for silver metal. In line with the presented read-across approach for silver nitrate, and by considering today's available relevant and reliable data, silver nitrate is self-classified as Reproductive Toxicant 1B (H360D) following the identification of developmental toxicity in an EOGRTS with silver nitrate. For reproductive performance and fertility, the available evidence does however not support a classification.

9. **Specific Target Organ Toxicity-Repeated Exposure**: Using relevant and reliable repeated dose toxicity studies with silver nitrate and read-across substances (like silver acetate), a STOT RE classification is not supported.

Considering the above input, Umicore supports a (self-)classification of silver nitrate (as submitted under EU-REACH) as proposed by EPMF:

Endpoint	Current Harmonised Classification (CLP Annex VI; index n° 047-001-00-2)	KEMI proposal for harmonised classification	EPMF (self-) classification (Silver Nitrate EU REACH dossier)
Phys-chem			
	Ox. Sol. 2 (H272)	Ox. Sol. 1 (H271)	Ox. Sol. 1 (D10≤250 µm) Ox. Sol. 2 (D10>250 µm) *Re-assessment following ongoing program.*
			Metal Corr. 1 (H290)
Human health			
	Skin Corr. 1B (H314)	Skin Corr. 1A (H314) add EUH071	Skin Corr. 1A (H314) *Re-assessment following ongoing testing program*
		[Eye Dam. 1 (H318) missing in table]	Eye Dam. 1 (H318)
		Repr. 1B (H360FD)	Repr. 1B (H360D)
		Acute Tox 2 (H300), add ATE 29 mg/kg bw	Not classified
		Skin Sens. 1 (H317)	Not classified
		STOT RE 2 (H373; nervous system)	Not classified
		Muta 2 (H341	Not classified
Environment			
	Aquatic Acute 1 (H400)	Aquatic Acute 1 (H400), add M=1000	Aquatic Acute 1 (H400), M=1000
	Aquatic Chronic 1 (H410)	Aquatic Chronic 1 (H410), add M=100	Aquatic Chronic 1 (H410), M=100

Best regards,

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