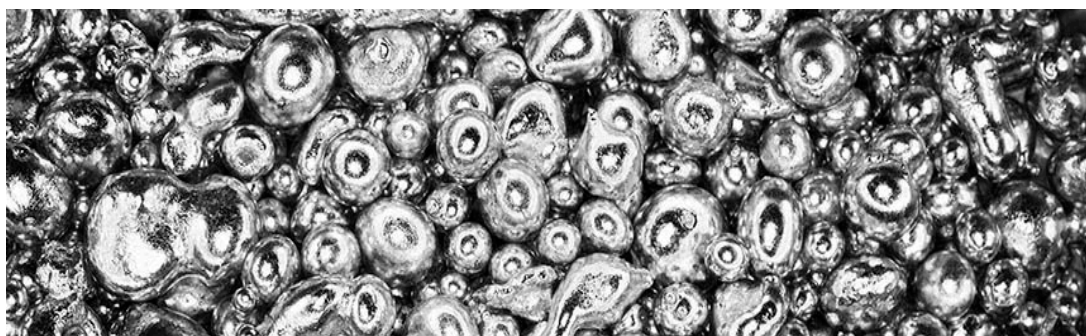


FINAL



INFO SHEET

SILVER AND SILVER COMPOUNDS



European Precious Metals
Federation



SILVER AND SILVER COMPOUNDS INFO SHEET

1. PROJECT BACKGROUND

In the context of the EPMF Data Gathering Project, data and information (on tonnage, uses and economics) has been collected from EPMF Members through questionnaires followed by phone interviews, in compliance with EU competition law.

The main objectives of the Project are:

- ***To respond to regulatory requests*** - In the context of REACH and other regulatory schemes, it is increasingly important to provide accurate socio-economic data on a sector, on a substance and on related supply chains. This requires disclosing to authorities information on tonnage produced and used. In this context, it is important to update the REACH registration dossier according to the new IUCLID 6 features (e.g.: aggregated tonnage per use) to ensure that authorities use these data in case of prioritization of the substance and for risk management measures in and outside REACH. The REACH registration dossier is and will increasingly become the main data source for such a type of prioritization exercise. If the relevant data is not available in the dossier, the risk will be that authorities use inaccurate data which could trigger inefficient and ineffective prioritization of certain substances.
- ***To engage in government affairs initiatives*** - The Precious Metals industry is an important player on the EU market and from an advocacy standpoint, EPMF would like to be able to demonstrate this by gathering socio-economic facts and figures with a view to:
 - Demonstrate the importance of the Precious Metals industry for the economy;
 - Ensure that recent facts and figures are available on the Precious Metals Industry when meeting Authorities; and
 - Provide up-to-date and complete data when needed at EU/EEA level (and at Members State level), notably in the context of public consultations.

2. TONNAGE AND REPRESENTATIVENESS

32 European Precious Metals Federation (EPMF) Members are involved in the manufacture and/or import of silver and its compounds, *inter alia*, silver nitrate, disilver oxide, silver carbonate, disilver sulfate and silver chloride.

The table below reflects the responses received to the questionnaires.

Participating companies have provided their latest EU/EEA figures (including the UK) available for 2015 or 2016.

The total coverage at EPMF level was calculated by comparing total reported tonnage with the estimated tonnage for non-participating companies. The tonnage is expressed as tonnage of the substance. The silver content is reported between brackets.

It is worth noting that in case of intermediates only isolated intermediates are reported and not the non-isolated intermediates which can represent a much larger tonnage. E.g. silver chloride in the production of silver metal.

Table 1: Volumes manufactured or imported in the EU by the EPMF members participating in this exercise. Volumes are expressed in tonnes per year for the substance. The number between brackets refers to the silver content.

Substance	SEA participants manufactured tonnage	SEA participants imported tonnage	Total tonnage	Total estimated coverage**
SILVER METAL	5300	1400	6700	65%
SILVER NITRATE	910 (580 T Ag)	140 (90 T Ag)	1050 (670 T Ag)	95%
DISILVER OXIDE	*	*	100 – 1000 (46 – 460 T Ag)	42%
SILVER CHLORIDE	*	*	55 (42 T Ag)	100%
OTHER: DISILVER SULPHATE, SILVER CARBONATE	*	*	< 20	71%

* Not reported for confidentiality reasons. Less than 3 participants manufacturing or importing. For the total (manufacture + import) 3 or more companies have reported data.

** Total estimated coverage is based on the figures received by the respondents to which we added the estimated total tonnage for the substance (manufacture + import) for non-respondents.

N.B.: There are limitations to the exercise regarding the coverage of the EU market. Indeed, the exercise was performed only at EPMF level and not with other registrants (e.g.: Loa buyers) or sectors exempted from REACH (e.g.: biocides).



3. MASS FLOW ANALYSIS

A mass flow analysis demonstrating the transformation process of one substance into another is provided below. For reasons of traceability we have reported the tonnage as silver content (like the value between brackets in Table 1 in the section above).

Both the silver chloride and the silver nitrate were reported to be used for 100% as intermediates and will not end up as such in articles. In most cases these substances are transformed to metallic silver either pure or directly in articles.

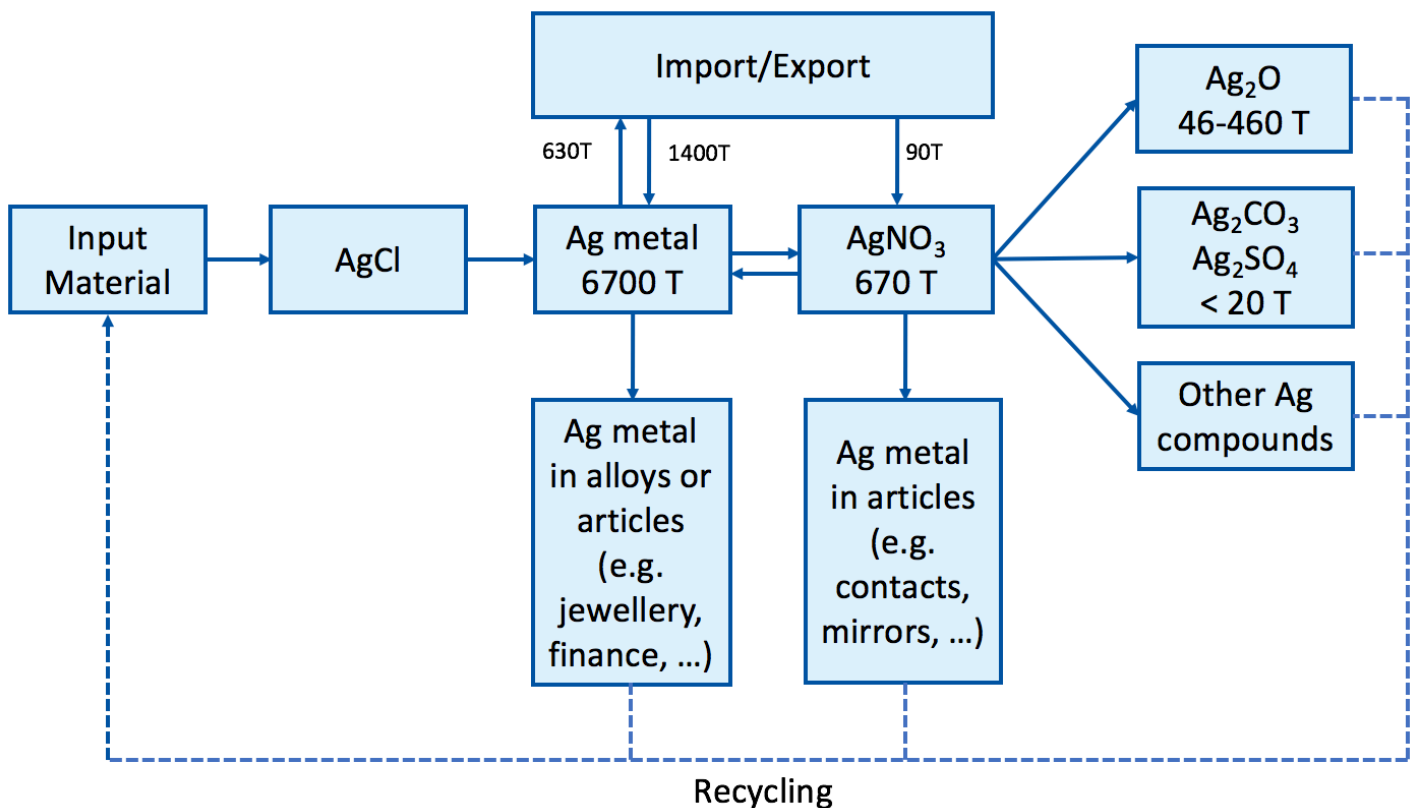


Figure 1: Mass flow of silver and silver compounds. Tonnage is reported in silver content.

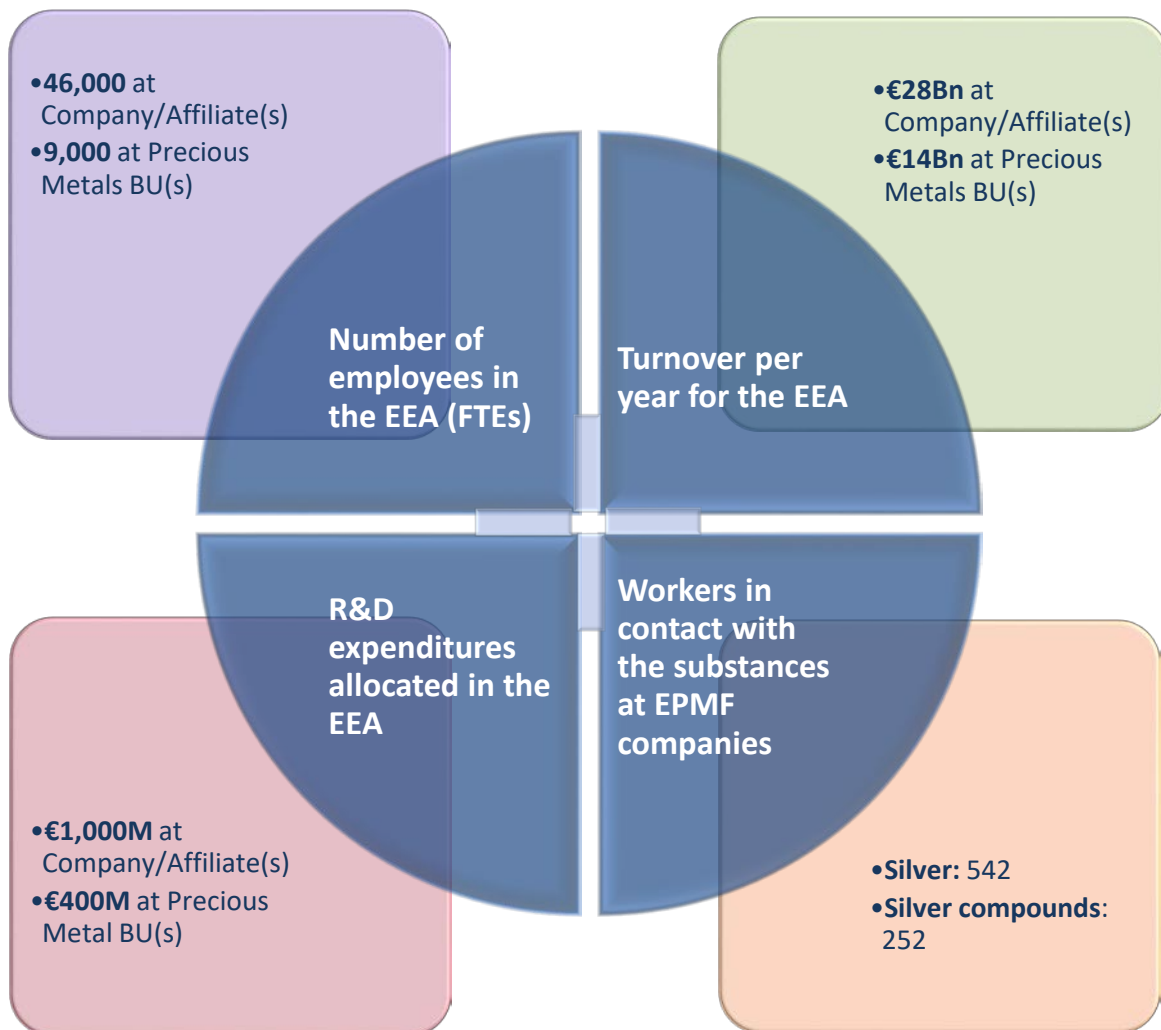


4. SOCIO-ECONOMIC DATA

Participating companies have reported information on a number of items which are detailed below.

The information reported concerns **16 EPMF member companies** and includes data regarding yearly turnover, R&D expenditure, the number of employees (FTE) and the number of workers in contact with the substances. Please note that the data (except for number of workers in contact with the substances) is not specific for silver and silver compounds but aggregated for all the precious metals and precious metal compounds manufactured by those companies. Splitting per precious metal was not possible as the manufacture of the different precious metals is interrelated and impact on one metal might affect the other metals as well.

Precious metals are usually a part of a bigger picture. The information is reported at company/affiliate level also covering non-precious metals activities and reported at precious metal business unit specifically covering only the precious metals.





5. TONNAGE DISTRIBUTION

All EPMF substances, and especially silver and silver compounds, are directly (due to classification, wide dispersive use etc.) or indirectly (due to grouping approach) at risk for further regulatory measures. The gathered data will be used to assist in the selection of adequate Risk Management Measures (when necessary).

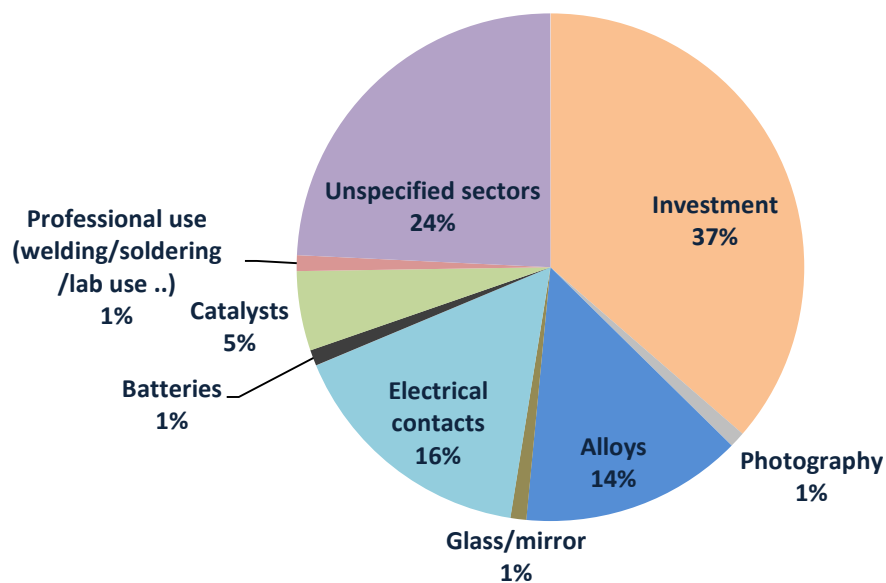
At this stage, and on the basis of the information reported by participating companies for silver and silver compounds, tonnage distribution tables have been prepared:

- Distribution of silver and silver compounds manufactured/imported by EPMF Members to the different sectors;
- Uses of silver metal;
- Uses of silver nitrate;
- Uses of silver oxide; and
- Use of silver chloride.

No charts are provided for silver carbonate and disilver sulphate due to the limited number of companies and the low tonnage involved.



Distribution of silver and silver compounds manufactured/imported by EPMF members to the different end sectors

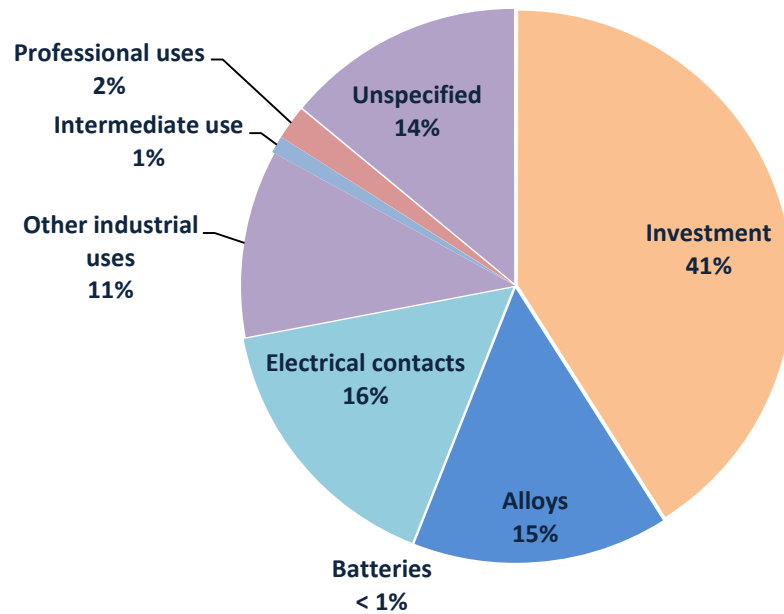


It should be noted that only the end sector is reported. Intermediate uses of silver and silver compounds are not reported to avoid double counting at this level. Also uses falling outside the scope of REACH, such as biocidal and pharmaceutical uses, are not reported.

It is worth noting that the "Unspecified sectors" can represent sectors already mentioned but at this stage it was not possible to link the tonnage to a sector in most cases due to the use of a distributor in the supply chain which declared the uses but not the related tonnage for business reason. It can also represent biocidal or pharmaceutical uses. Other uses like soap, deodorants and cosmetics have been mentioned as possibilities as well but without volume estimations.



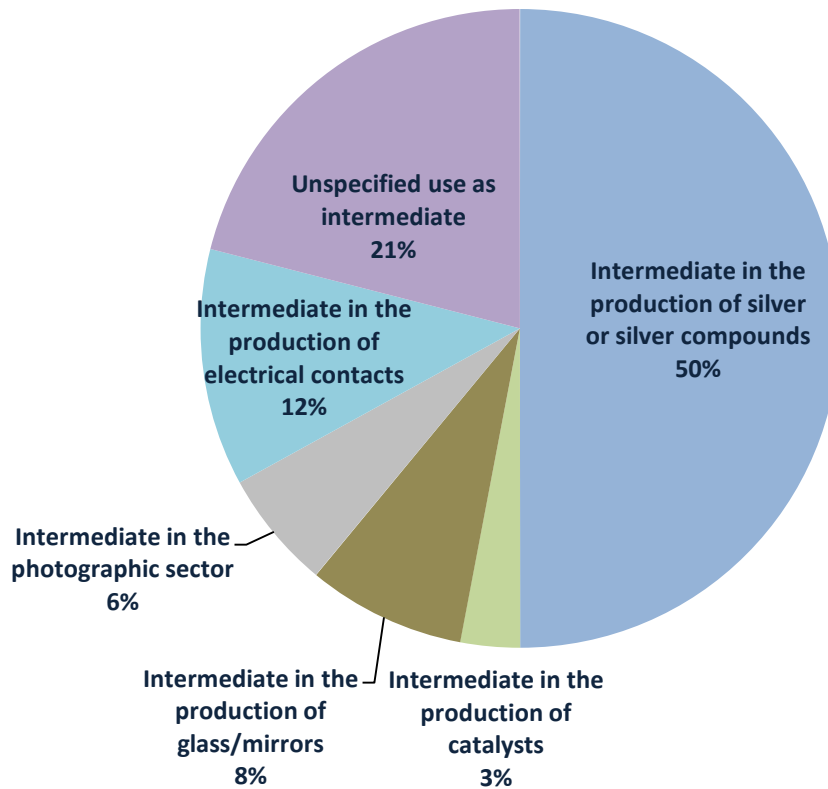
Uses of silver metal



For silver metal, 14% of the reported tonnage was not allocated to a specific use. It is worth noting that the “Unspecified” most likely represent uses already mentioned but at this stage it was not possible to link the tonnage to a use in most cases due to the use of a distributor in the supply chain which declared the uses but not the related tonnage for business reason.



Uses of silver nitrate

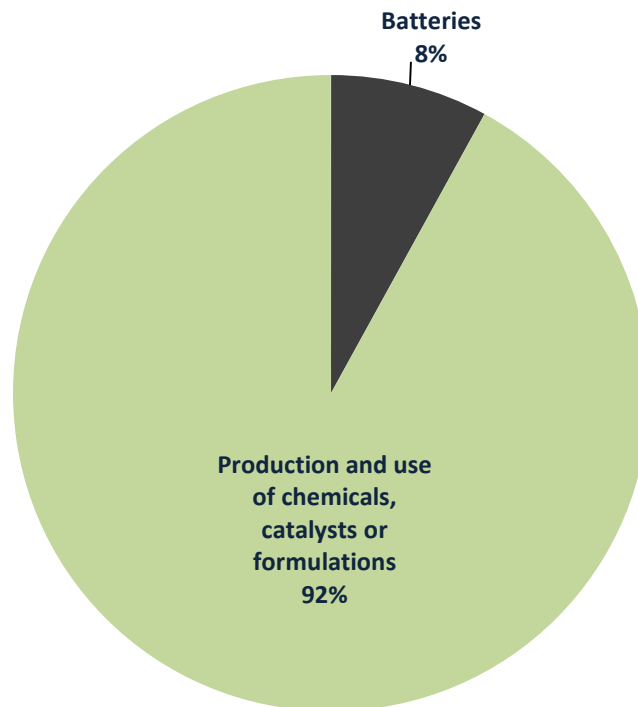


It is important to note that all the uses are intermediate uses in different sectors. In the silver nitrate registration dossier, the use of the substance as dissolution agent on oil platforms has been reported. This is a niche use to which no tonnage was allocated during the survey.

For silver nitrate, 21% of the reported tonnage was allocated to “Unspecified use as intermediate”. It is worth noting that the “Unspecified use as intermediate” most likely represent uses already mentioned but at this stage it was not possible to link the tonnage to a use in most cases due to the use of a distributor in the supply chain which declared the uses but not the related tonnage for business reason. According to some members the use of silver nitrate in the production of glass/mirrors might be underestimated and account partially for the “unspecified” use. Also biocidal or pharmaceutical uses have been suggested as potential uses that could be part of the “unspecified” use.

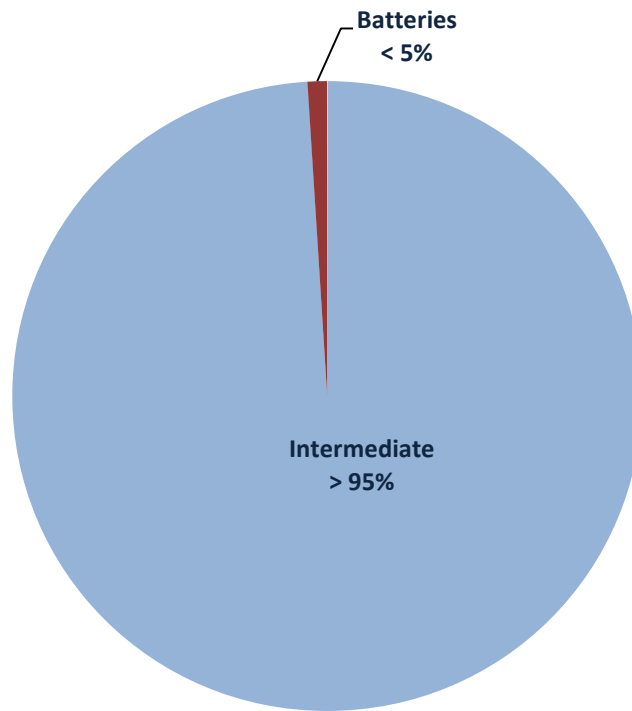


Uses of silver oxide





Use of silver chloride



Low quantities of silver chloride are used in batteries. Due to the limited number of companies in that use a value < 5% has been reported to keep confidentiality. Silver chloride is also used in the photographic industry and in biomedical sensors but none of the respondents have allocated tonnages to those uses during the survey.



6. GLOSSARY

Company means any entity engaged in an economic activity, regardless of the legal status of the entity or the way in which it is financed (Case C-41/90 Höfner and Elser v. Macrotron GmbH, para. 21).

Intermediates means a substance that is manufactured for and consumed in or used for chemical processing in order to be transformed into another substance (hereinafter referred to as synthesis):

(a) non-isolated intermediate: means an intermediate that during synthesis is not intentionally removed (except for sampling) from the equipment in which the synthesis takes place. Such equipment includes the reaction vessel, its ancillary equipment, and any equipment through which the substance(s) pass(es) during a continuous flow or batch process as well as the pipework for transfer from one vessel to another for the purpose of the next reaction step, but it excludes tanks or other vessels in which the substance(s) are stored after the manufacture;

(b) on-site isolated intermediate: means an intermediate not meeting the criteria of a non-isolated intermediate and where the manufacture of the intermediate and the synthesis of (an)other substance(s) from that intermediate take place on the same site, operated by one or more legal entities;

(c) transported isolated intermediate: means an intermediate not meeting the criteria of a non-isolated intermediate and transported between or supplied to other sites;

Isolated intermediate is used for on-site and transported intermediates.

Precious Metals Business Unit means a logical element or segment of a company (such as accounting, production, marketing) representing a specific business function, and a definite place on the organizational chart, under the domain of a manager. Also called department, division, or a functional area. In this case, the segment is related to precious metals business.

Turnover means the amounts derived by the undertaking concerned in the preceding financial year from the sale of products and the provision of services falling within the undertaking's ordinary activities after deduction of sales rebates and of value added tax and other taxes directly related to turnover (see Article 5(1) of EU Regulation (EC) No 139/2004 of 20 January 2004 on EU Merger Regulation).



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