

# WIEGAND

WIEGAND EVAPORATORS, INC.

OAKLAND CENTER  
8940 ROUTE 108  
COLUMBIA, MD. 21045  
TELEX: 87-879  
PHONE: (301) 997-9500

1982 AUG 10 AM 11 20

July 7, 1982

EXPORT/IMPORT  
AND  
INTERNAT'L SFGRS

*IB82014  
From West Germany*

Mr. R.N. Moore  
Nuclear Regulatory Commission  
Office of International Program  
East/West Towers South  
4340 East West Highway  
Bethesda, MD 20814 *20815*

No. 4731  
CKV: jkp

Subject: License to Import Radio Isotope for Density Measurement

Dear Mr. Moore:

We need to import two more units for a third customer in Wisconsin for which I am enclosing two applications.

The units are to be installed for in-line determination of solids in feed and concentrate from our evaporator handling edible grade gelatin solution. They will be airfreighted into USA through Baltimore/Washington International Airport and will be shipped to Peter Cooper Corporation, Oak Creek, Wisconsin. We are only passing on this consignment to Peter Cooper Corporation, and this application is only for an import license to get it into USA.

Please grant us the import licenses at the earliest.

Thanking you.

Sincerely yours,

WIEGAND EVAPORATORS, INC.

  
C.K. Venkat

Enclosures

Commission-No.:

Applicant: Wiegand Evaporators Inc. Oakland Center 8940 Route 108  
Columbia / Maryland 21045

1. Description of the radioactive substance:

- 1.1 Isotope:  $^{137}\text{Cs}$   
1.2 Chemical condition: Caesium-silicate  
1.3 Physical condition: solid (glass bead)  
1.4 Design: capsuled  
1.5 Quantity and activity: 1 piece(s), each 1000 mCi  
1.6 Manufacturer: Amersham Buchler  
D-Braunschweig  
1.7 Supplier: Labor Prof. Dr. Berthold,  
D-Wildbad/Schwarzwald

2. Description of the capsule:

The radioactive substance is kept in a double stainless steel capsule being tightly closed by a protective gas welding. Details on the construction of the capsule can be taken from drawing no. P 2623-100. The capsule of the radioactive source is tested on tightness by the manufacturer resp. supplier according to the regulations of the Physikalisch-Technische Bundesanstalt before delivery (see enclosed PTB-certificate), and accordingly a seal test certificate is issued.

3. Description of the shielding:

The radioactive source is kept in a shielding container with lockable radiation output channel.

The shielding container has the following characteristic data:

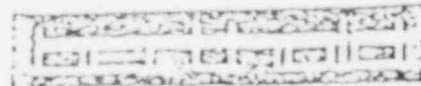
External diameter:	approx. 220	mm
Height:	approx. 270	mm
Weight:	approx. 81	kg
Effective shielding thickness:	approx. 97	mm Pb

Details on the construction of the shielding container can be taken from drawing no.: PB 2197-002

4. Dose rate (except in direction of useful beam):

In 1 m distance from the non-shielded radioactive source: approx. 350 mRem/h

- 2 -



In 1 m distance from the shielded radioactive source: approx. 0,02 mRem/h

At the surface of the shielding: approx. 1,6 mRem/h

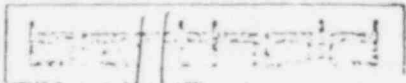
5. Description of the intended application:

The source is a part of a radiometric density measuring equipment.

6. Whereabouts of radioactive sources which are no longer in use:

Return to the responsible collection depot for radioactive waste or to the supplier.

Date: 03.06.1982 ha/st



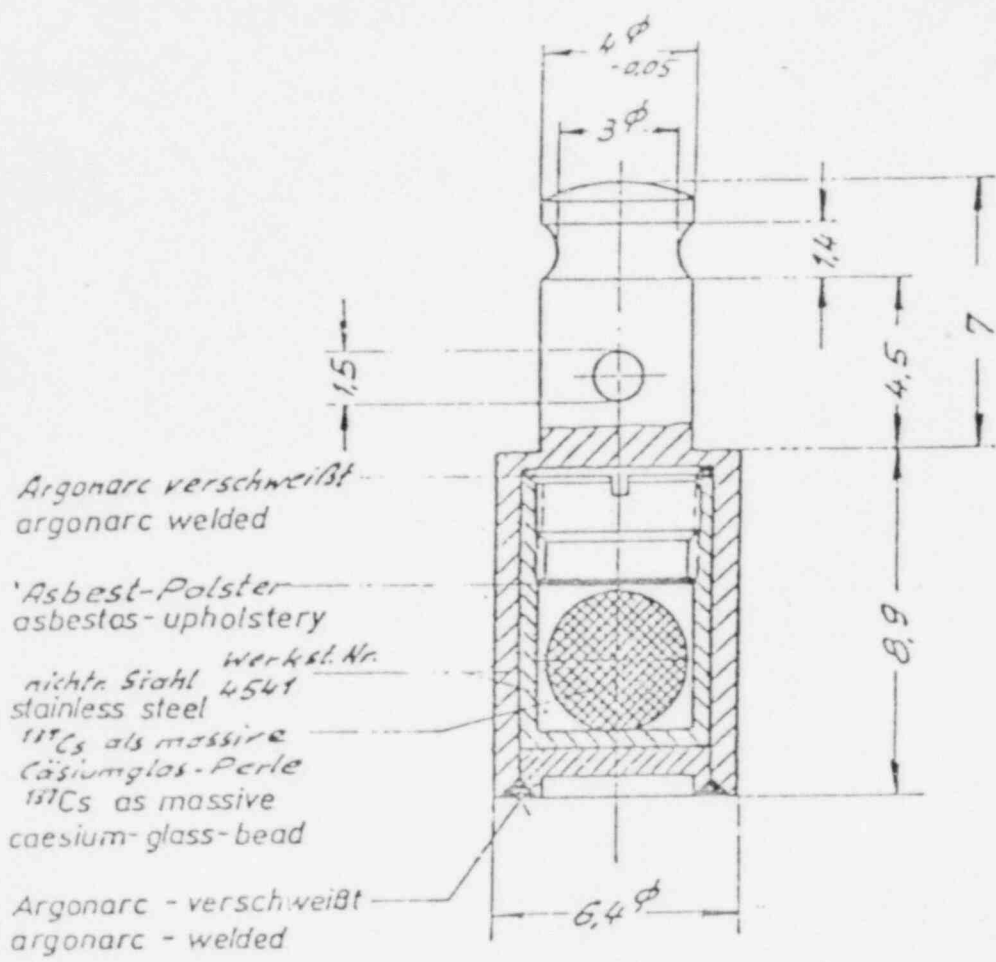
Labor *A. A. A.*  
7547 Wiedenau (Schwarzwald)  
Catsbacher Str. 22 - Postfach 160  
Telefon 07 70 611 25 81 - Telex 97 240 19

Enclosures:

Drawing P 2623-100

Drawing PB 2197-002

PTB-certificate 28245.65 VI B/Ra and 6.3-10369/75



Argonarc verschweißt  
argonarc welded

Asbest-Polster  
asbestos-upholstery

nicht Stahl Werkst. Nr. 4541  
stainless steel

$^{137}\text{Cs}$  als massive  
Cäsiumglas-Perle  
 $^{137}\text{Cs}$  as massive  
caesium-glass-bead

Argonarc - verschweißt  
argonarc - welded

**Beschreibung der Hülle:**

Bauartbeschreibung: doppelt umschlossen

Material: Innen- und Außenkapsel Edelstahl W.Nr. 4541

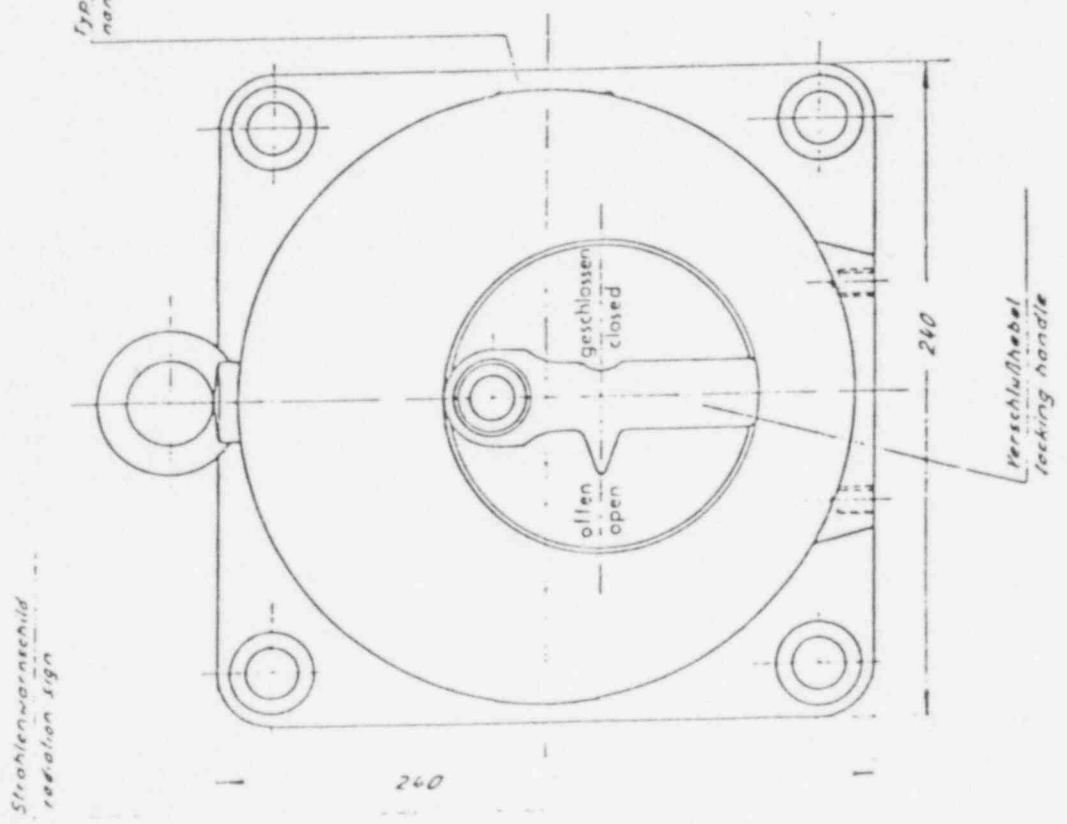
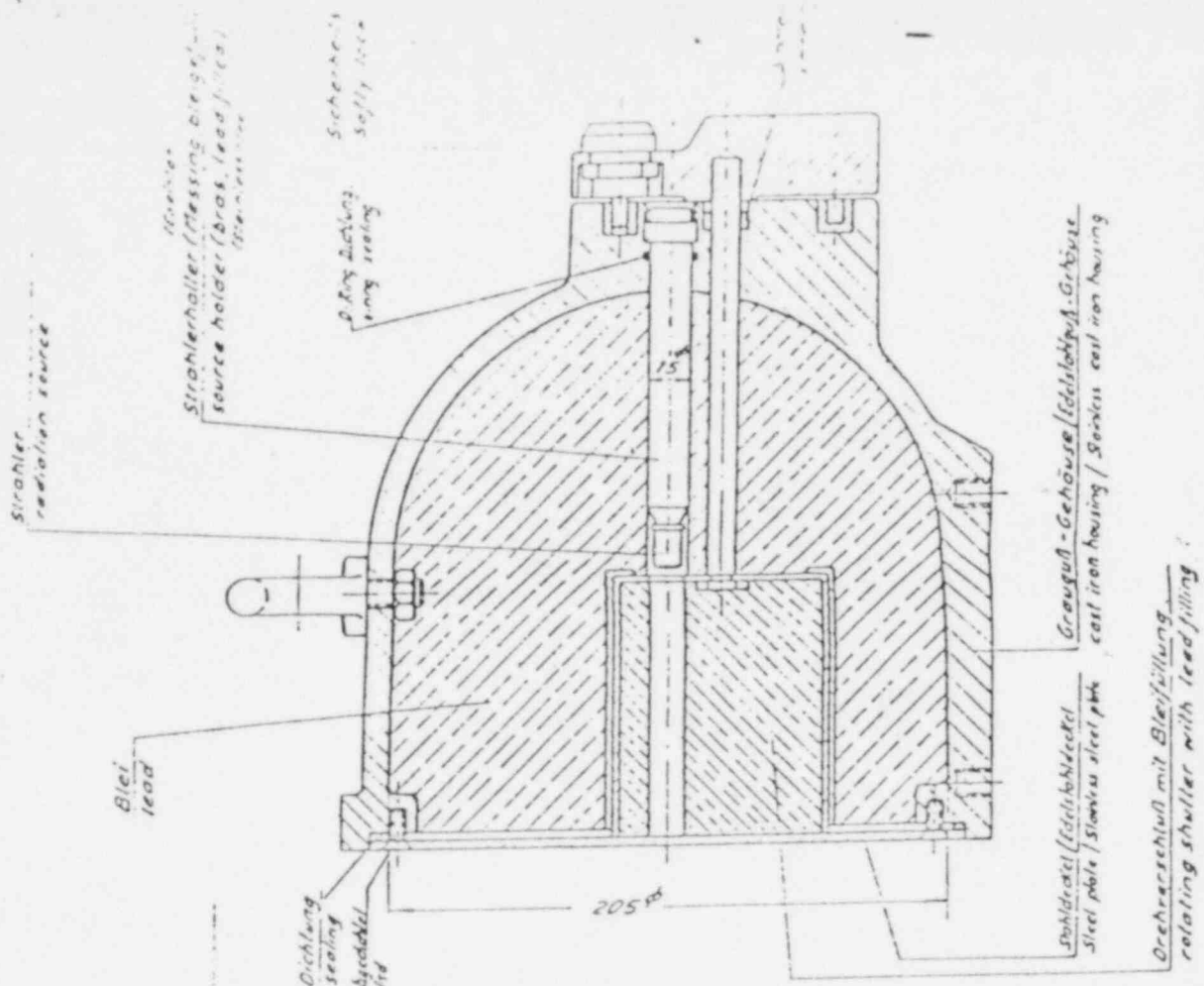
Wanddicke: Innenkapsel: 0,5 mm

Außenkapsel: 0,65 mm

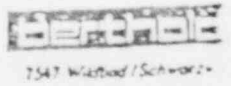
Art der Abdichtung: Argonarc-verschweißt

*Entspricht Buchler u. Co-Ausführ. VZ-0079 bzw. IND 79/1Cs*

		Laboratorium Prof. Dr. Berthold Wildbad im Schwarzwald		Bearbeitung	
				S. Nachbearbeitung	
Ausg. Date	Änderung	Tage	Name		
Werkstoff		Maße ohne Toleranzangabe		Diese Maße werden besond. geprüft	
Maßstab		Industrial - Point source to 500 mCi		Zeichnung Nr.	
5:1		$^{137}\text{Cs}$ -Industrie-Punktstrahler bis 500 mCi		P 2623-100	



Gewicht = 81 kg  
 weight = 81 kg



Department 6, Braunschweig

Messrs.  
Buchler & Co.D-33 Braunschweig  
3rd March, 19663300 Braunschweig  
Frankfurter Str. 294

No. 28245.65 VI B/Ra

Re.: Cs-137 industry sources according to Vz 0079, Vz 0087,  
Vz 0090, Vz 0091, Vz 0092;  
Examination in respect to § 44 of the Erste Strahlen-  
schutzverordnung,  
Your letter Se/sei of October 21, 1965

As regards the question of terms for seal-testings at Cs-137  
industry sources of the above models, the Physikalisch-Technische  
Bundesanstalt (PTB) says as follows :

#### 1. Source Construction

Compared with former models the new models have the active  
substance not as water-soluble salt but in the form of  
compact pearls out of Caesium-glass (Cs-137 as addition to  
the glass smelt). The pearls are enclosed into welded  
stainless steel coatings (steel DIN 4541) with double walls;  
only with sources of type Vz 0091 the internal covering is  
consisting of a hard soldered Monel capsule.

#### 2. Examinations

From 19.1. till 25.2.1966 continuous immersion tests have  
been undertaken at two pearls of approx. 2 mm  $\emptyset$  whose acti-  
vities had been destined to 95 mCi, in order to find out  
the Cs-137 separation capacity from Caesium glass (26 sepa-  
rate tests per source). A water-methanol-mixture (1:1) with  
100 mg Cs-ions per l have served as immersion solution. In  
between distilled water was used with some tests. Immersion  
times have been between 17 and 94 hours, temperature was  
20-25°C.

After a beginning decay by nearly two dimensions, a timely  
constant activity emission happened after about 7 days,  
being 1  $\mu$ Ci/day with one of the sources and 0,1  $\mu$ Ci/day with  
the other. At both sources the activity was by one dimension  
higher with distilled water.

A ready-made source of type Vz 0079 (engraving Q 325, activity about 12 mCi) was set out 3 times to a blow test, each blow being 1,5 mkp. For this test the source was fastened on a ground of soft wood or lead; the blow subject was a steel bowl of 30 mm radius, which fell down freely from 1,5 m on the source. Although the source has been remarkably deformed the following wipe and immersion test did not indicate any coming out radioactive substance (indication limit 0,2 nCi).

### 3. Final Decisions

By bringing the radioactive substance into the glass smelt the radioactive substance flowing off small leaks is noticeable reduced and the danger of losing larger quantities at a rough damage is reduced. Terms for repeated tests according to § 44 of the 1. SVO can therefore be set to 3 years, and - with an especially secure firm mounting into measuring equipments - to 5 years, if the following conditions are fulfilled :

- a) The glass pearls must be thoroughly cleaned before coming into the coating.
- b) Within 6 months before handling them to the applicant the covering of the sources must be examined on leakage and contamination. The activity of the substance may not exceed 0,01  $\mu$ Ci. The applicant must receive a certificate containing the engraving of the source, examination method as well as date and result of the test.
- c) The sources may only be applicated with environmental conditions, granting the covering to be free of leakage.
- d) A seal-test must be effected without delay when there is suspicion on leakage.

This statement is only for sources which correspond to the construction drawings at the Bundesanstalt in its essential features (physical and chemical condition of the radioactive substance, material- and wall thickness of the covering, kind of sealing and activity).

The handed in test subjects can be picked up.

By order

(Dr. Weiss)

Enclosure  
bill of costs

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT  
Department 6, Braunschweig

Amersham Buchler  
GmbH & Co. KG

D-33 Braunschweig  
4th July, 1975

P. O. Box 1120  
D-33 Braunschweig

No. 6.3 - 10369/75

Re.: Cs-137 industry sources according to Vz 0259 and Vz 0271;  
Reference in respect to §44 of the Erste Strahlenschutz-  
verordnung

Ref.: Your letter Ku/st dated 21/03/75 with enclosed construc-  
tion drawings

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The Cs-137 industry sources manufactured by Messrs. Amersham Buchler, Braunschweig, according to Vz 0259 and Vz 0271 are containing Cs-137 in the form of compact pearls out of Caesium-glass with an activity of max. 500 mCi. In its mechanics it corresponds in the essential points for the tightness - double coating out of stainless steel of material no. 4541, wall thickness and Argon-Arc welding - to the Cs-137 industry sources according to Vz 0079 manufactured since 1965. The only difference lies in the kind of clamping device.

The reference of the Physikalisch-Technische Bundesanstalt of 03/03/66, No. 28245.65 VI B/Ra hence is extended to the Cs-137 industry sources according to Vz 0259 and Vz 0271. At the same time it is altered, that repeat examinations may be renounced when the sources are especially secure and fixed mounted into the measuring equipments (examination period 5 years up till now). Here, a mounting must be understood, protecting the source against shocks, pressure and corrosion, and where penetration of aggressive vapours, moisture and dust is avoided. The radiation output opening of the equipment must be closed with a metal plate, whose integrity may be easily controlled.

By order

(Prof. Dr. H. M. Weiss)