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UNITED STATES ATOMIC ENERGY COMMISSION WASHINGTON, D.C. 20545

AUG 2 4 1972

L:MB:FCD (1968)

> Amersham/Searle Corporation ATTN: Mr. Paul Duncombe Marketing Manager Radiation Sources Department 2636 South Clearbrook Drive Arlington Heights, Illinois 60005

Gentlemen:

We have reviewed the information contained in your letters dated May 4, 1972 and July 21, 1972, describing your Models CDC A-M and S clinical cesium therapy sources and have determined that your sources are acceptable for licensing purposes.

Sincerely,

Frank C. Dairy

Frank C. Davis Materials Branch Directorate of Licensing

8411190376 840124 PDR FOIA SAVINI83-587 PDR 50944

SHEET 1

Caesium-137 needless. J tubes

Needles

Trocar points, elongated countersunk eyelets.

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Figure 18

approx. ¹³⁷ Cs c mCi/cm	ontent* (mCi	rate (nominal)† mR/h at 1 m	external length mm	active length mm	code ext. dia. 1-85mm wall : 0-6mm	code ext. dia. 1.65mm wall : 0.5mm
1	1.5	0.4	25	15	CDC.A1	CDC.S16
	2.25	0.6	34.5	22.5	CDC.A4	
	3	0.8	42	30	CDC.A2	CDC.S17
	4.5	1.2	58	45	CDC.A3	CDC.S18
2	3	0-8	25	15	CDC.B1	CDC.S4
Contraction Park	4.5	1.2	34.5	22.5	CDC.B4	
	6	1.6	42	30	CDC.B2	CDC.S5
	9	2.5	58	45	CDC.83	CDC.S40
Differentially loaded						cell arrangement‡
'Dumb-bell'	4.5	1.2	42	30	CDC.D1	f.a.f.
	6	1.6	58	45	CDC.D2	f.a.a.f.
'Indian Club'	4.5	1.2	47	35	CDC.D3	a.a.g.
	6	1.6	63	50	CDC.D4	a.a.a.g.

Identification

1mCi/cm needles: gold band near point

a) 1.5mCi, active length 15mm

?mCi/cm needles: plain CDC.D1/D2: two gold bands, one near eyelet, one near point CDC.D3/D4: one gold band near eyelet.

f) 1.5mCi, active length 7.5mm

g) 1.5mCi, active length 5mm

Tubes

cervix types rounded ends, elongated countersunk eyelets.

rounded ends, elor	ngated countersunk eye	lets. F	igure 19		
	Ext. length:	20mm	21mm		
	Act length:	13-5mm	15mm		
	Ext. dia.:	2.65mm	2·3mm		
	Wall thickness:	0-5mm	0-5mm		
approx. 137Cs content* mCi	exposure rate (nominal)† mR/h at 1m	code	code	identification on eyelet end	
15	4.1	CDC.J1	CDC.M1	I-Yellow	-
30	8.2	CDC.J2	CDC.M2	I-Red	
45	12.4	CDC.J3	CDC.M3	3-White	-
60	16.5	CDC.J4	CDC.M4	4-Black	-
75	20.6	CDC.J5	State State Large State	V-Blue	-

*mCicontent

This is quoted only for licensing/transport purposes and for convenience in comparison with earlier specifications.

t exposure rate, see definition on page 72.

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1 Cells used in differentially-loaded needles

	184	1.000	80.
18	1.1		
	14		40
	10	2	+
1	Sec.		1

The Radiochomical	Centre	Amersham
the trachocumient	venne	Patriersmann

England

L 0354

Cons Conflicted sentin 25. to ...

Certin	CC:	'e	Oî.	meas	ure	ment	07
COUTES		-	te	inian	cas	sium.	137

Description			N (c	lominal activity assign-137)	1.5 millicuries	
	1 COC A1		H	alf-life aesium-137)	30 years	
	Dimensions: External le	ngth 25 mm	External diamoter	1.55 mm		
	Active len	gth 15 mm	Screenage	6.2 mm	of 12 . Ir. 18	
Supplied to	br. Trins		Customer's order	C.3 222	:32	
	Noval Novaltal		Item number	Item number EX.2549 Lab ref. CMR 2/1/748		
	Welverhaupton		Lab ref.			
Measuroment	We certify that the content in	terms of milligrams radium	-226 equivalent on			
	14th April 1976	was				
	Source number	Radium-226 equivalent (mg)	Source numb	ier	Radium-226 equivalent (mg)	
	CDC A1/99	0.520				
	· ·		-			
			-			
	L] [
Accuracy	The uncertainty in the quoted	d content of each source is e	estimated to be less th	nan 🗄 7 %	(maximum overall er	
Votes	 Tests for leakage and for Radium-226 equivalent i 0.5 mm platinum, which g exposure rate of the specifier The measurement was n from a similar standard cassi The standard source was chamber. The specific gammito to be 8.25 roantgens per hou On the reference date the 	r surface contamination have s defined as the number of m ives the same exposure rai d source is measured in the nade by comparing the rate um-137 source, using an ion as calibrated in terms of mil a ray emission of a point so or from 1 milligram at 1 cm, as a sources contained a small	a been carried out wit nilligrams of radium-22 te as the specified so mid-plane at right-a e at which gamma ra- nisation chamber. liroentgens per hour urce of radium-226 so quantity of caesium-1	th satisfactory results to in the form of a burce at a distan- ngles to the primi distion emerged to at 25 cm using creaned by 0.5 m 34, the activity of	ults. a point source screened ice of 25 cm in air. cipal axis of the source from the source with an air-walled ionisa im platinum was assue which was approxima	
	G.C4 % of the caes subtracted	ium-137 activity. The caesiu in deriving the equivalent c	m-134, contribution t ontent. The half-life o	o the measured e of caesium-134 is	exposure rate has not t 21 years.	
		Date o	ertificate prepared	19th Augu:	st 1970	
Approved						
		Ptay			for Director	
TRC/C/15						
R	ne ladiachemical Iontra Id	address: Amershan: Buckinghamshire England	Little Chalfont 4444	Activity	Active	

Ser .	Certificate of model	Ecte Cerui Dite Cerui urement of caosium-137	n england Lace senti-	, ₇₇	Е U30U Сору
Description	1 CDC J2		N (c H to	lominal activity [aesium-137) alf-life aesium-137)	30 millicuries 30 years
	Dimensions: External length Active length	20 mm 13.5 mm	External diameter	2.05 mm 0.2 mm 0.3 mm	of 20 % Ir. Pt.
Supplied to	Addiotherany Department Aberdoen Joyal Infirmary Forest Hill Aberdoen		Customer's order Item number Lab ref.	101354 CMR	2/4752
Measurement	We certify that the content in term	s of milligrams radium	-226 equivalent on		
	17th Day 1977	Was Radium-226	1 [Radium-226
	Source number	equivalent (mg)	Source numb	ler	equivalent (mg)
	000072034	11.49	1		
Ассигасу	The uncertainty in the quoted con-	tent of each source is t	estimated to be less t	nan 🗄 7 %	(maximum overall er
Notes	 Tests for leakage and for surfale Radium-226 equivalent is defined for surfale The measurement was made from a similar standard coesium-14. The standard cource was can chamber. The specific gamma ray to be 8:25 roantgens per hour from 5. On the reference date these so of the coesium-15. On the reference date these so of the coesium-15. 	ace contamination have ned as the number of m the same exposure ra- ince is measured in the by comparing the rate 37 source, using an io librated in terms of mil- emission of a point so m 1 milligram at 1 cm, surces contained a small 137 activity. The caesis ariving the equivalent of Date of	e been carried out wit hilligrams of radium-22 te as the specified so a mid-plane at right-a a at which gamma rai nisation chamber. liroentgens per hour urce of radium-226 s quantity of caesium-1 im-134, contribution t content. The half-life of certificate prepared	h satisfactory results for the form of a burce at a distan- ngles to the print diation emerged for at 25 cm using creened by 0.5 m 34, the activity of the measured e of caesium-134 is SOth flay	ults. a point source screened ice of 25 cm in air. cipal axis of the source from the source with an air-walled ionisa im platinum was assur which was approxima exposure rate has not b 21 years. 1977
Approved			L		
TREICHO		· Phy	such department		for Director
	The Radiochemical Centre Ltd	address: Amershom Buckinghamshire England	telephone: Little Chaifont 4444	telegrams and cables: Activity Amersham Telex	S totaxi 4 Active Amersham