

recd 23 Mar 88; 0830E

bcc w/o encl: HRDenton
 MCongdon
 JRShea
 IC Staff
 File-TechNotice
 SSchwartz
 DNussbaumer
 JFouchard
 RBernero
 JLong
 JBecker

MAR 21 1988

Dear Colleague:

Enclosed is a recent update on the 3M static eliminator problem with particular emphasis on the international aspects. I would like to draw your attention to what is identified as Attachment D of this package, a February 15 letter from 3M to its overseas distributors, in which 3M requests the distributors to withdraw all 3M brand static eliminators from use in the food, beverage, cosmetic, and pharmaceutical markets. Attachment E is a listing, by country, of known users of the CM devices.

In the near future, NRC plans to issue an order to 3M, confirming our understanding that 3M has agreed to suspend all future exports of nuclear static eliminators. A copy of that order will be airmailed to you when it is issued.

Sincerely,

original signed by
 Ronald D. Hauber

Ronald D. Hauber
 Assistant Director for International
 Cooperation
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 Public Affairs

Attachment:

B. Mallet Memo dated 3/15/88, w/ attachments

8809200303 880825
 PDR DRG EMV3MCO
 PDR

*see previous concurrence

IFC: GPA/IP *	: / GPA/IP	: GPA/IP	:	:	:	:
IAME:RSenseney:eb	: MRPeterson	: RHauber	:	:	:	:
DATE: 3/17/88	: 3/21/88	: 3/18/88	:	:	:	:

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AIR MAIL

AQUEOUS SOLUTIONS OF Zr

Normality of Aq. HF	Gms. ZrOx per liter sat. sol.
10.05	548.5
15.05	444.3
20.09	288.3

aqueous hydrofluoric acids of

NITRATE IN ROOM TEMPERATURE

n of HNO₃ to ZrOCl₂·8H₂O in
rred at room temperature and
solid were analyzed.

10 gms.
1.

ZrO ₂	Solid Phase
14.8	Zr(NO ₃) ₄ ·6H ₂ O
14.6	"
13.2	"
13.0	"
12.4	Zr(NO ₃) ₄ ·5H ₂ O
11.9	"
12.0	"
14.1	"
13.1	"
12.8	2 Phases (?)
10.8	Zr(NO ₃) ₄ ·HNO ₃ ·4H ₂ O(?)
10.5	2 Phases (?)
9.6	Zr(NO ₃) ₄ ·2HNO ₃ ·4H ₂ O
8.06	"
8.58	"
9.23	Zr(NO ₃) ₄ ·2HNO ₃ ·3H ₂ O(?)

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ZIRCONIUM Zr

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100 cc of a saturated solution of zirconium nitrate in ethyl ether,
prepared by frequent agitation and allowing to stand over night at about
20°, contain 0.003 gm. ZrO₂. A saturated ethereal solution prepared as
above, but using zirconium nitrate which had been dehydrated at 130°,
contain 0.004 gm. ZrO₂ per 100 cc. (Wells, 1930.)

Data for the extraction of Zr(IV) from HNO₃ + Ca(NO₃)₂ solutions at
20° by methyl isobutyl ketone 1:1 (given by Rydberg and Bernstrom, 1957).

ZIRCONIUM OXYNITRATE ZrO(NO₃)₂·2H₂O

0.37 gms. ZrO(NO₃)₂ are dissolved in 100 gms. of a saturated solu-
tion in isoamyl alcohol at room temperature. Less than 0.1 gms.
dissolve in methyl n-hexyl ketone under the same conditions. (Roth-
schild, Templeton and Hall, 1948).

ZIRCONIUM HYDROXIDE Zr(OH)₄

- The Ksp of Zr(OH)₄ is 8×10^{-32} . (Korenman, 1955)

- Assuming the reaction, $Zr(OH)_4 \rightleftharpoons Zr(OH)_4^{4+} + 4OH^-$, the Ksp is
 3×10^{-32} . (Larsen and Gammill, 1950)

Oks, 194C found the solubility to be 8.0×10^{-11} moles per liter by
potentiometric titration.

Melting points in the system ZrO₂ - CaCl₂ are given by Belosersky
and Kucherenko, 1940.

Data for the solubility of ZrO₂ in molten cryolite is given by
Kido, 1954.

ZIRCONIUM PHOSPHATE ZrO(H₂PO₄)₂

SOLUBILITY OF ZIRCONIUM PHOSPHATE IN AQUEOUS HYDROCHLORIC ACID AT 20° (v. Hevesy and Kinsara, 1925)

About 0.1 gm. of the compound was shaken with about 150 cc. of the
hydrochloric acid in a thermostat for 3 days. 100 cc. of the sat.
solution were evaporated and the residue ignited.

Normality of aq. HCl	Gms. ignited residue from 100 cc. sat. sol.	Mol. ZrO(H ₂ PO ₄) ₂ per liter sat. sol.
6.01	0.0013	0.00012
10.00	0.0011	0.00023

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From Weekly Information Report; week ending 26 Feb 88

C. STAFF REQUIREMENTS - BRIEFING ON STATIC ELIMINATION DEVICE PROBLEMS,
1:30 P.M., MONDAY, FEBRUARY 8, 1988, COMMISSIONERS' CONFERENCE ROOM,
D.C. OFFICE (OPEN TO PUBLIC ATTENDANCE) - SECY to V. Stello, Jr. dated
2/25/88

The Commission* was briefed by the staff and Administrator Frank Young of the Food and Drug Administration on recent events with potential impact on public health and safety relating to the use of static eliminators containing polonium-210 manufactured by the Minnesota Mining & Manufacturing Company.

FEBRUARY 26, 1988

ENCLOSURE 0