Gordon Taylor
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12-16-69

I. Intro

II. Publicity — update —

* copies of current article to Gordon Taylor
(MC to furnish)

Environment article to come 1/70
we'll indicate polysulfide + rubber market

NWF
JKS
RHM
MWF

Nature - UK magazine - "Irish Sea Incident"
11/1/69 — cleared PCB's

Daily Telegram - UK — traces — too small
cleared PCB's

UK monitoring PCB level in British waters -

Seals - cleared PCB

UK Ministry of Health request re: PCB entry to water
* (NCR reply) reply - decision by head of Div'n - Wilson -
Jan. 1, 1970 - we lean toward telling re: A-1254/1260 only
- what would NCR like? - they to reply to us

Capsule prod'n
Morne Woods, England — inland near London -
Coating
Forest, England - 80 miles from coast
Nivelle, Belgium -

1242 contains many PCB's — principally tri-
one mono, di-
tetra and pen-
sharp peaks of tri - all possible isomers
none found to date in environment - we think it degrades
1254 is principally penta - less sharp peak at
penta level than at tri - level of chlorination.

MONS 031583

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Swedish work - examined artifacts in dead animals -
of EC-GC curves
sampling for sea water

III. A-1242 biodegradation

no A-1242 found in any environmental samples -
- water
- animals
} find distribution expected from 1254+1260

in acclimated system, mono-, di- and tri- PCB "go" promptly
to biodegraded products
indications: chromatogram peaks disappear

MC to look at pilot plant studies - to add to going
sewage tr.

some birds do degrade A-1242 by selves -

availability of analytic methods -
ppb and detection in ppb range

few thousand samples in our lab
Sweden
G.B.
Nett.
Gulf Coast U.S.
West England U.S.
west Coast US.

birds - some
fish
lesser marine org
major animals
mud
pine needles
land birds
water
mothers milk

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to start Purdue studies ~~starting~~ - 1 yr for work
8 mos - 1 yr publication lag
info to cover decomp anaerobic + aerobic
mixed energy systems in static disposal plants
- of all Aroclors.

continue to work on own ID of samples

IV. Effluent info -

A - sinks - modern analytic methods will now
- will be toxic to Benthic plankton + bottom feeders -
- Aroclor is liver/kidney toxin - (also 25 ñ other organic cmpds)
(hepato-renal toxin)

effluent - is toxic in immediate discharge area -

B. Portage - other plants

Dieldrin from hosiery plant - plant had to stop using Dieldrin

Consequences of Portage Treatment plant being down

1. self-disconnect + trap all drains w/ PCB

2. dispose by cut + fill sanitary land fill

algae plugging sewage plant

~~the effluent~~
3. verify that Portage has not called State yet
4. hire consultant
5. help city

100,000 Hous't paper 69 US
75,000 tons " 69 ROW

4

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effluent: if system were operating - levels of discharge are too high
~~2x~~ 2000 gal discharge each week - cooked with caustic
2000 twice a week
gelatin capsule
Aroclor

no synthetic resin

also other floor drainage and other washings

self-disposal of washings
sanitary land fill
or
incineration
or
acid digestion

other wastes - to settling basin

timing - how fast

sample of effluents from Appleton plant - a converting and coating plant
off-machine coating process
tank wash down

Start of 70 to go to on-machine coating at Combined Mills -

Riney Vogt
Lloyd Taylor

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Don't use Aroclor pure now - NCR dilutes 5

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V Monsanto alternates

MIPB - samples to date quite "pure"

question about [illegible] biphenyl
Gordon Taylor - has looked at DIPB before - 3 yrs.
MIPB looked better but not sure how much

Biphenyl - can be used as effective diluent

cooperative study of biphenyl candidates
variations or mixtures of BP's

would have to construct plant to produce
different BP - would have to be specifically
designed -
⇒ don't have capability to supply MIPB or
other BP now.

4-6 mos. lead time to provide intermediate qtys -
40,000 lbs/mo.

few weeks lead for pilot plant qty - few hundred lbs.
couple hundred pounds per pilot plant batch

Action

I { 1. decision on BP composition first
2. pilot plant qtys for optimized BP

II. make field trial for MIPB as is to provide alt. in
event of catastrophe

III. "Scope" report on plant req'ts, time estimates

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high % of co-solvent 1:1 on volume basis
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A-color 1232 - odor was prime problem
now can mask better

A1238 or 1239 would be recommended -
virtually no tetra or penta content -
so all would be biodegradable

fractionating column in present plant - to
cut out tetra and penta
off-the-shelf column ⇒ 6-8 mos installation

co-solvent is Shell Dispersol - called Magnaflux Oil
cut from kerosene - an aliphatic cut just above
kerosene - used in metal casting machines to
detect imperfections

IV. 1. NCR to look at mixes of 1232/1242
give us % -

2. MC to look at distillation reqts for this

3. MC to arrange for A1238 samples.

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other candidates -
- we've got dozens - CVL solubility not adequately
screening

more screening test - make drop - then draw-down with
razor blade - measure speed of color development -
15-18 sec for full color development -
measure spectra photometrically also by transmission

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5% CVL solution good std.

HB-40 shows least intense

2 reactants - 1st is instantaneous but not water stable
2nd is slower but is moisture stable

CVL
BLMB or VLME or something

1st is more light sensitive
2nd is light stable

HB-40 hydrogenated terphenyl (to 40%) to give liquid material

HB-60 discontinued!
HB-20 doesn't give CVL ~~color~~ solubility
poor odor

V. HB-40 - looked at recently - 2-3 yrs ago
poor color efficiency
looked at diluents - BP impairs least
magnaflux next least
have not looked at A1221 as diluent
Taylor to review data

VI. NCR to send tech. rep. to St. Louis to screen

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VII. low melting solids - BP
DPO - problem holding in capsule
odor problem

19¢/TL A 5442 (46-50°C MP) - terphenyl
lower chlorinated terphenyl - conceivably could dissolve in a co-solvent
considering now

VIII. Toxicology of MIPB

3300 mg/Kg LD-50 / MIPB

3400 " / Table salt

13-1400 " / A-1248

terpheryls - suspect not metabolized

J E Gordon Taylor
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NCR
Main + K Streets
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