

Monsanto

FROM (NAME & LOCATION) Technology Department - O. DeGarmo

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cc P. B. Hodges - PHODG
R. H. Joslin - RJOSL

SUBJECT TENTATIVE PROCESSES -
PROCEDURE E-10

REFERENCE

TO : All Technology Department Personnel
(Akron, Creve Coeur, South Second St.)

Please substitute enclosed Attachment 5
for the one included with the copy of
subject procedure mailed to you on
December 16, 1970.

This Environmental Check List was
developed with the aid of Paul Hodges,
Environmental Engineering Manager of the
Organic Division, and Dick Joslin of
Central Engineering.



O. DeGarmo

enc.

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ATTACHMENT 5*

ENVIRONMENTAL CONTROL CHECK LIST

I. Essential Information

A Tentative Process should contain the information listed below as a minimum to aid in evaluating environmental control problems generated by the proposed process. Additional data will likely be needed for the audit required by CED Procedure 602, but the Tentative Process cannot anticipate what these data will be.

A. Atmospheric Emissions

Chemical Composition

Quantity - lbs/100 lbs product

Specific volume - cubic feet/lb of discharge -
if applicable

Toxicity (if available)

Odor

Particulate matter included in vent or stack
(mention potential)

B. Aqueous Liquid Discharges

Chemical composition

Flow or quantity per 100 lbs product

pH

Acidity or alkalinity (expressed as ppm CaCO_3)

Specific gravity

Total solids

Total dissolved solids

Total suspended solids (insoluble)

Quantities of nutrients

Nitrogen (nitrates, nitrites, ammonia)

Phosphorus (phosphates)

Temperature

Color - as generated

- in pH range 6-8

Toxicity (if available)

C. Solids and/or Liquid Organic Discharges

Chemical composition

Physical Form (Cake, chunks, pellets, wet, dry, etc.)

Water content, if any

Quantity - lbs/100 lbs product

Melting Point, viscosity

Toxicity (if available)

Collection method

D. By-Products

Are there recoverable products in the plant waste streams? Can process recycle by-products? Can special plant waste streams (solvents, alcohols, etc.) be sold for reprocessing?

II. Special Considerations

Special consideration should be given any potential discharge of the following materials to the environment:

A. Atmospheric Emissions

Sulfur Oxides

Particulate Matter

Carbon Monoxide

Photochemical Oxidants

Hydrocarbons (except Methane)

Nitrogen Oxides

Acid Gases and Mists

Colored Emissions and/or Smoke

Lachrymators

Odors, mercaptans, amines

Toxic Materials (Arsenic, Hydrogen Cyanide, etc.)

Heavy Metals (Mercury, Lead, Cadmium)

Radioactive Materials

Halogens and their Compounds

Solvents

Hydrogen Sulfide

Ammonia

Asbestos

Polynuclear Organics

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B. Aqueous Effluents

Metals and their compounds:

Arsenic	Manganese
Antimony	Mercury
Barium	Molybdenum
Cadmium	Nickel
Chromium	Selenium
Cobalt	Silver
Copper	Thallium
Iron (1)	Vanadium
Lead	Zinc

Other Significant Pollutants:

Boron	Cyanides
Chlorides (1)	Fluorides (1)
Oils and Greases	Sulfate (1)
Phenol	Halogenated Organics (PCB's, etc.)

Color - This should be checked at
ultimate pH discharged to
environment.

Odors, Mercaptans, Amines

Lachrymators

Nutrients - Phosphorus and Phosphates
Nitrogenous Compounds

Solvents and Hydrocarbons

Carcinogens

Toxic Materials (Cyanides, Ammonia, etc.)

Significant Quantities of Organics
(Represent high treatment costs)

Acids or Alkalis

Radioactive Materials

Nitriles

C. Solid Wastes and Concentrated Organic Liquids

Chlorinated Compounds - particularly if they are
toxic.

Other Toxic Materials

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(1) Objectionable in significant quantities only.

D. General

1. Excessive quantities of acids or alkalis will require neutralization prior to discharge or further treatment. Such expense should be considered in making process selections, particularly where gypsum or other insoluble sludges are products of neutralization.
2. Landfilling of contaminated liquids (particularly toxic materials), toxic solids and of soluble organics will not be acceptable in the future. Generally, the alternate will be incineration (there are exceptions). If these wastes contain halogens, phosphorus, sulfur, nitrogen, high ash contents, or significant quantities of metal salts (i.e.: sodium or calcium which attack refractory materials) the cost for disposal is likely to be high.

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