

~~Carbon copy~~

(Before using Study Page 4)

For 16 gals -

Formaldehyde in 40% Base -

Formaldehyde	4 gals
Sodium Chloride	3 $\frac{1}{2}$
Sodium Acetate	1 $\frac{1}{4}$
Ammonia chloride	1.0
Acid Sulfate	0. $\frac{3}{4}$
Magnesium chloride	0. $\frac{1}{2}$
Water (distilled)	6.0

~~CCC~~
~~Final Report~~
~~Sept 2nd / 19~~

Place the above in 11² 1. close stopper in funnel and pinch cock. Heat for 50 minutes at 90°F. then open all stoppers and raise heat gradually to 190°F - do not exceed heat given above -

Formaldehyde must be examined for strength before using - chemicals must be chemically pure -

Liquid now passes to 11² 3 - when the test plate open stoppers in 11² 2 and allow gas to pass (3 drops every 30 seconds) liquid now passes through 11² 3 to 11² 5 close stoppers to 11² 6 - when run is completed close stoppers from 11² 3 allow 11² 5 to remain in action for 30 minutes. temperature must not exceed 65°F. at the end of this time open stopper to 11² 6 and draw 70 sample for testing formaldehyde strength.

To 11² 4 add formaldehyde 3 gals apply heat at 87°F open stopper to 11² 5 & close stoppers to 11² 3 & 6. Gas will pass through 11² 7 and into 11² 5. if on the first test 11² 5 is deficient in formaldehyde this can be added through 11² 4 ^{as fast} finally open stopper to 11² 6 and take sample for final testing in this the formaldehyde must be 4.80% formaldehyde gas - if the difference is greater than 0.06% add through 11² 4. if the

2

(Before using Study Page 4)

Amount is greater than 4.86 is mass to be placed in No 1 and to run with fresh mixture to bring it down - (allow .30 for escape of gas when handling and for loss in apparatus this brings your calculations within 0.02 g amount)

No 1 = Flask - 32 ounces use great care in the handling given as pressure may blow out stoppers or tubes

No 2 Dye Flask = 12 ounces add balance of a mixture of 3 parts mercuric and 1 part of Fuchsin (Carbol)

No 3 . Tube containing 20% Salite and 80% fused Sodium Carbonate - with fine platinum and copper wire connectors at ends -

No 4 Glass Retort 10 ounces for liberation of gas (Temperature must be kept)

No 5

Purifying jar contains 130 grammes of coarse drop Silver - Chemically pure and 95 grammes coarse drop Copper - Chemically pure - connected with (Blow pipe) platinum wire -

No 6 . Finished product - keep in cool dark place

No 7 . Bulbs containing Calcium chloride

In Jar 1125 great care must be exercised
as this blows off very readily under pressure from
1124

Chemicals must always be examined to confirm
label on Bottles -

Formaldehyde - is examined before using. - in
1125 - before treatment from
1124 and after treatment from
1124 -

Formaldehyde examination is as follows

Treat 10 cc test normal silver nitrate
with 6 drops of 50% lactic acid and add 10 cc of solution
of Potassium Cyanide containing 3.1 grams of Potassium
Cyanide in 500 cc water, and make up to 50 cc. Shake
fist and titrate 25 cc of this filtrate with test-normal
Ammonium Sulphocyanate - using ferric chloride as
indicator - Accdy, another portion of 10 cc of test
normal silver nitrate with lactic acid, add 10 cc of
potassium Cyanide solution to which the above formaldehyde
solution has been added, make up the whole to 50 cc
fist & titrate 25 cc of this filtrate with test normal
Ammonium Sulphocyanate - The amount of potassium
Cyanide used in 3 formaldehyde in times of test-normal
Ammonium Sulphocyanate is found by multiplying 3 times
the difference between the two results

The known chemical company - Vancouver BC Sept 2nd / 19

This is a small test apparatus, and requires ^{amount of} considerable research in order to make ^{and prove} it commercially possible - as you are taking the formula and drawings from me against my wish - you must assume all responsibility - I feel that you are very wrong in trying to raise money or apply for patents in this incomplete apparatus - my advice has always been to wait until I had it perfected - this of course you refuse to do - the choice which I made you was either myself or the formula - you choose the latter - my parting advice is to study well the instructions accompanying this drawing - avoid chemical mixtures or fumes until you know what they are, and finally carefully watch your product temperatures and stoppers in case some part of the apparatus blows out.

