



Sugar

Health Department

CITY HALL

VANCOUVER, B. C.

Dextrose = ^{Simplest Sugar} Grape Sugar = Starch Sugar - Glucose - is produced by the action of dil acids. or of certain ferments on starch, dextrin or cane Sugar

Dextrose = Analysis - make a rough preliminary test and then
 sufficient of the solⁿ when made up to 100 cc with
 water shall not contain more than 1%, reducing sugar.

Fehling's
Test
 — Run into a 250 cc flask 5 cc Fehling's Cu solⁿ A and
 5 cc alkali solⁿ B. add about 40 cc H₂O. mix. boil
 over a free flame with wire gauze. while still boiling
 add from a Burette a measured quantity of the Sugar solⁿ
 prepared as above. until the Cu after 3 minutes
 boiling is all reduced to Cuprous Oxide. the end point
 is determined in a variety of ways. the change is first
 from blue to green. then a dull red tint. and finally a
 bright brick red. — The solⁿ in Burette may be added quite
 rapidly. until a dull red color is reached. If the flask is
 removed from the flame. and the bright light from a window
 viewed through the solⁿ with the eye on the level of the surface,
 a thin film scarcely wider than a line. will be observed
 just below the surface. which is due so long as some of the
 Cu remains un-reduced. when all the Cu is reduced the film
 ceases to show. and becomes colorless or yellow —

Sugars

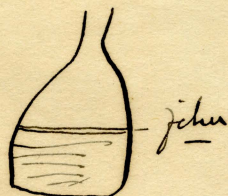


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If the fibre is not at once apparent - it may often be made quite noticeable by diluting the Soln in the flask with water. - the exact point is best arrived at by decanting a few drops of the Soln in the flask through a filter, acidify the filtrate with acetic acid and add a drop of K_4FeC_6 - un-reduced Cu gives a brown-red ppt. - Towards the end the Sugar Soln shows no color. Boiling the liquid for 3 minutes after each addition, until no brown-red color is produced with K_4FeC_6 -

0.05 grams of { Invert Sugar
Dextrose or
Levulose } will reduce 10 cc of Fehling's Soln

Suppose for example a sample of brown Sugar is to be examined for invert Sugar - this usually contains from 2 to 6 % invert Sugar - hence if 10 grams of sample are dissolved in 100 cc the resulting soln will not contain more than 1% invert

Suppose 12.5 cc gives 10% reduce 10 cc of Fehling's
10 cc Fehling's = 0.05 invert Sugar

then for 12.5 cc of the 10% sugar soln 0.05 gram invert Sugar
100 cc Sugar soln contains 10 grams sample and 12.5 cc contains
1.25 gram of sample - the equal of 0.05 gram invert Sugar

$$\text{Hence \% of invert Sugar} = \frac{0.05 \times 100}{1.25} = 3.9$$



Syr

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A = Fehling's = 34.63g grams of carefully crystals of pure CuSO_4 dissolved in water and diluted to exactly 500 cc

B = Fehling's = 173 grams Rochelle's salts & 50 grams Sodium Hydroxide are dissolved in water and diluted to exactly 500 cc.

Standardize by dissolving .5 gram of pure anhydrous dextrose in water and diluting to exactly 100 cc.
10 cc of this soln should exactly reduce 10 cc of Fehling's