

## Answer to Question #62398, Chemistry / Other

How many volts does the combustion of ethanol and glucose that provide energy correspond to?

**Answer:**

Heat of combustion for ethanol is 1300 kJ/mol and for glucose is 2805 kJ/mol.

The energy  $E$  in joules (J) is equal to the voltage  $V$  in volts (V), times the electrical charge  $Q$  in coulombs (C):

$$J = \frac{V}{C}$$
$$V = J \times C$$

If we suppose charge flow of  $x$  coulombs:

For glucose combustion:

$$E(V) = 2805x \frac{V}{mol}$$

For ethanol combustion:

$$E(V) = 1300x \frac{V}{mol}$$

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