Answer on Question #81592, Chemistry / Organic Chemistry

How many monochlorinated compounds of molecular formula C4 H9 Cl can be made by chlorinating butane and isobutane? what are they?

Answer

1. Monochlorinated compounds of molecular formula C_4H_9Cl made by chlorinating butane: $C_4H_{10}+Cl_2\to C_4H_9Cl+HCl$

$$+ Cl_2 \rightarrow + HCl$$

2-chlorobutane

$$+ Cl_2 \rightarrow Cl + HC$$
1-chlorobutane

2. Monochlorinated compounds of molecular formula C₄H₉Cl made by chlorinating isobutane:

$$C_4H_{10} + CI_2 \rightarrow C_4H_9CI + HCI$$

$$+ Cl_2 \rightarrow CI + HCI$$

2-chloro-2-methylpropane

1-chloro-2-methylpropane

So, there are four monochlorinated compounds of molecular formula C4 H9 Cl made by chlorinating butane and isobutene:

- 1) 2-chlorobutane
- 2) 1-chlorobutane
- 3) 2-chloro-2-methylpropane
- 4) 1-chloro-2-methylpropane

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