

BALANCED CHEMICAL REACTIONS

mms plus citric equals chlorine dioxide plus sodium citrate plus salt plus water



**mms plus citric equals chlorous acid plus sodium citrate
this is unstable**



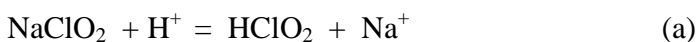
MMS plus HCL equals chlorine dioxide plus salt plus water



both chlorine dioxide and chlorous acid are very oxidative

Some comments by Tomas:

HClO₂ in equation (2) is an intermediate product of reaction sodium chlorite with acids:

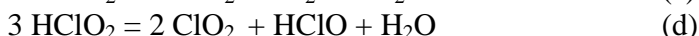
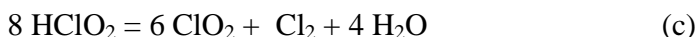


Yes, chlorous acid is pretty unstable and it decomposes in different ways.

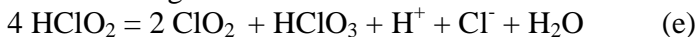
Main reaction:



Minor reactions:



and according to some authors



The reaction (a) it is not quantitative one. There is always some amount of unreacted sodium chlorite in the reaction mixture. And there is always some amount of byproducts – chlorate, chlorine, hypochlorous acid and chloride (and of course sodium salt of the acid used for reaction with sodium chlorite and free acid as it is usually in excess of stoichiometric need).

In the CDS process by Mr. Kalcker or preferably Mr. Pavel Eiselt, we can produce very pure ClO₂ solution if scrubber with saturated sodium chlorite solution is placed between reaction and receiving vessel. But after several weeks storage time I found some amount of chlorite and chlorate anions in ClO₂ solution.