

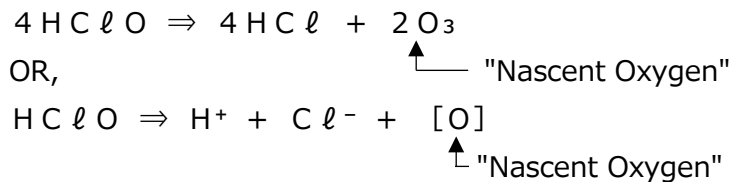
Decompose 9 items cause bad odor by Mechacera Catalytic Action

Mechacera system is a deodorizing, sterilizing, and oxidizing technology that uses a chemical reaction resulting from contact with a ceramic that incorporates a Fe/Mn/Co oxidation catalyst containing free chlorine.

Mechacera (trade name) easily hydrolyzes free chlorine contained in water to produce Hypochlorous acid.



Further reactions proceeded



Strong oxidizing action of Hydrochloric acid, Hypochlorous acid, and generated oxygen is the basis for the development of various applications such as odor detection and sterilization as an advantage of Mechacera Water.

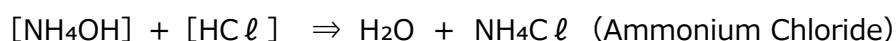
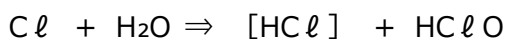
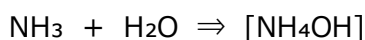
In other words, it is thought to help significantly reduce odor by making malodorous gases soluble in water.

1) Deodorization of **AMMONIA (NH₃)**

NH₃ is present in solution mostly as NH₃ molecules.

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NH₃ dissolved in water is considered to react with HCl produced by catalytic action of Mechacera to form odorless Ammonium chloride. (Acid-base catalytic reaction)

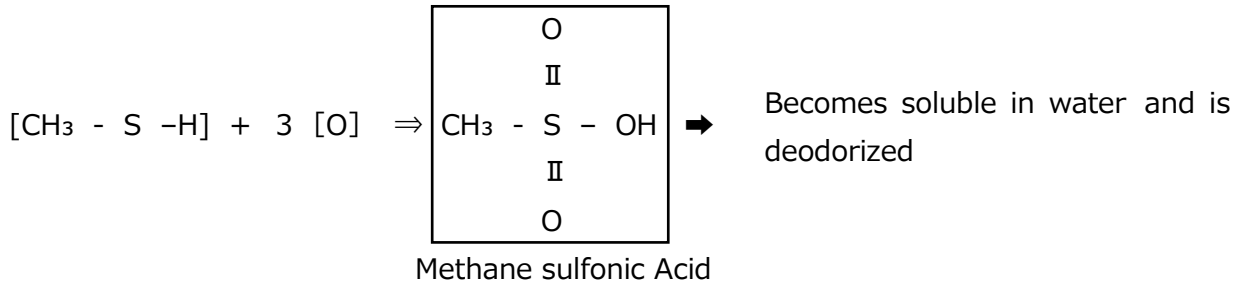
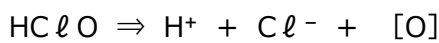
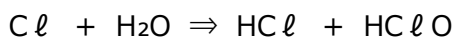


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⇒ Soluble in water, odorless

2) Methyl Mercaptan (CH₃ - S - H)

It is believed to react with active oxygen [O] through the catalytic action of Mechacera, changing to methyl disulfide, which further reacts to Methane sulfonic acid. (Oxidation-Reduction Catalyst Reaction)

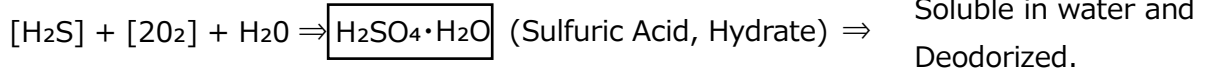
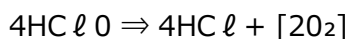
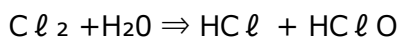


3) Hydrogen Sulfide (H₂S)

Dissolves in many solvents such as water and ethanol. It reacts with reactive oxygen species (2O₂) generated by the catalytic action of Mechacera to form sulfuric

Hydrogen Sulfide (H₂S) is soluble in water and odorless.

(Acid-base catalyzed reaction)



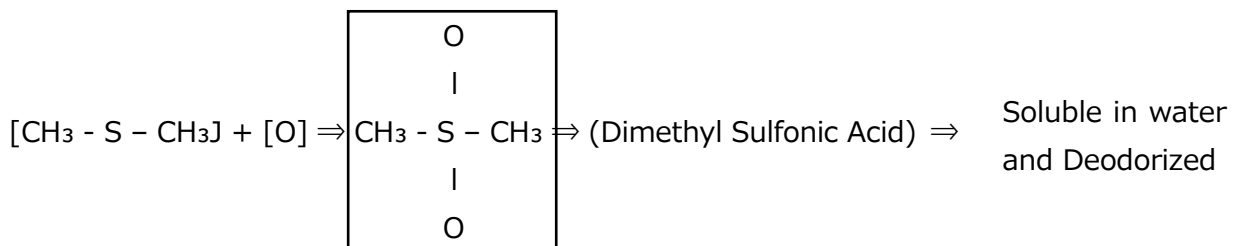
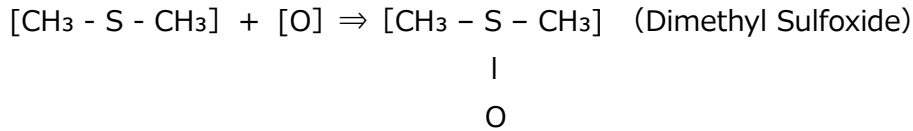
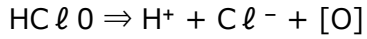
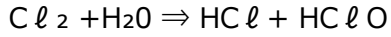
4) Methyl Sulfide (CH₃ - S - CH₃)

The reaction with reactive oxygen species [o] generated by Mechacera's catalytic action is considered to be a reaction with Dimethyl Sulfoxide, which further reacts with reactive oxygen species [O] to form Dimethyl Sulfonic Acid.

The statement is considered to react with reactive oxygen species [o] and change to dimethyl sulfonic acid. (Redox-catalyzed reaction)

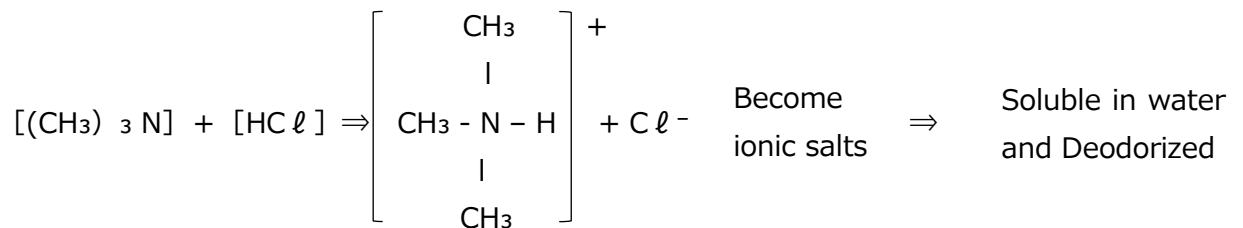
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Dimethyl Sulfoxide is a colorless, odorless liquid, and dimethyl sulfonic acid is soluble in water.



5) Trimethylamine [(CH₃)₃N]

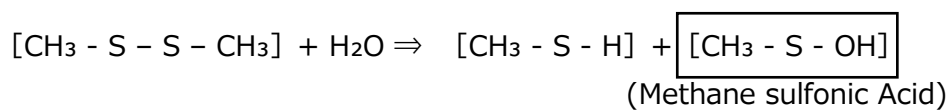
It is considered to react with Hydrochloric Acid produced by Mechacera's catalytic action and transformed into Hydrochloride Salt. (Acid Base Catalytic reaction)



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6) Methyl disulfide (CH₃-S-S-CH₃)

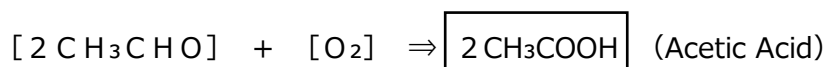
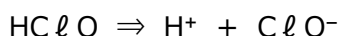
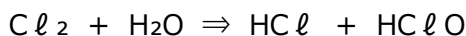
It is believed to react with reactive oxygen species [O] generated by Mechacera's catalytic action to form Methyl Mercaptan and Methane sulfonic Acid, which further react to form Methane sulfonic Acid. (Redox catalytic reaction)



Soluble in water
and Deodorized

7) Acetaldehyde (CH₃CHO)

Emits a pungent chemical odor. Through the catalytic action of Mechacera, the active oxygen (2O₂) produced turns it into acetic acid, which is soluble in water and odorless. (Redox catalytic reaction)



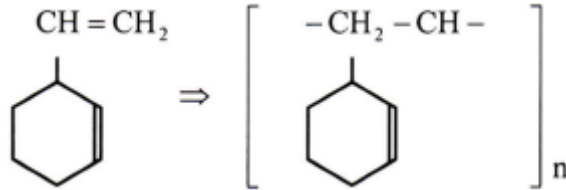
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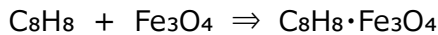
8) Styrene (CH=CH₂)

Neutralized with Alkali, only the CH component separates to form giant molecules.

Not volatile like Styrene



Or, it is considered to react with iron tetroxide (Fe₃O₄) leached from ferrite (iron oxide), saturating the double bond and deodorizing it.

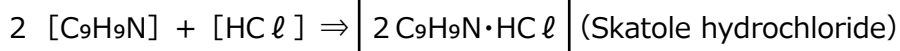


9) Skatole (C₉H₉N)

Sewage fecal odors in public toilets and urine treatment plants.

It is believed to react with hydrochloric acid (HCl) produced by Mechacera's catalytic action to form Skatole hydrochloride.

(Acid-base catalytic reaction)



Soluble in water
and Deodorized

Reference : Removal of Suspended Solids (SS)

It can also be deduced that sol dispersions of water-insoluble inorganic compounds (ultrafine CaCO₃·Al₂O₃, TiO₂, SiO₂, etc.) exhibit catalytic activity, and H₂O+H⁺⇒H₃O⁺ (hydronium ions) and H₂O+OH⁻⇒H₃O₂⁻ (hydroxyl ions) emulsify and remove SS.