

Clarification material



# Iron Composite Particle As Soil/Groundwater Purifying Materials [RNIP®]

FEATURES

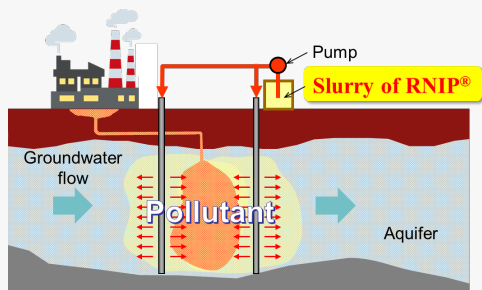
“RNIP®” is iron composite nanoparticle which is applied TODA KOGYO’s wet synthesis technologies. It can rapidly purify VOC, Volatile Organic Compounds, and insolubilize heavy metals.

CHARACTERISTICS

- 1 **Rapid purification of pollutant**  
The decomposition rate of TCE (trichloroethylene) is 100 times faster than common iron powder.
- 2 **In-situ purification for deep soil pollution**  
It diffuses easily to soil and purifies VOC and heavy metals pollution at deep places in-situ.
- 3 **No secondly pollution**  
Since RNIP® has no hazardous metals, it’s an eco-friendly material with no secondly pollution.

SPECIFICATIONS

RNIP® is nanoparticle of core-shell structure of  $\alpha$ -Fe and  $Fe_3O_4$  (mean particle size: 70nm, BET specific surface area:  $30m^2/g$ ). The slurry of RNIP® (specific gravity: 1.18 to 1.25, solid content concentration: 25wt%) is constructed by such as in-situ injection and purifies pollutant.

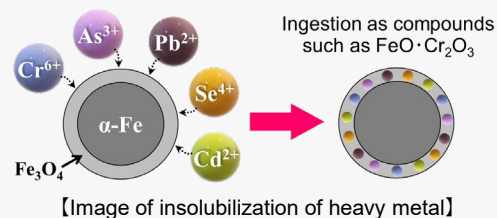
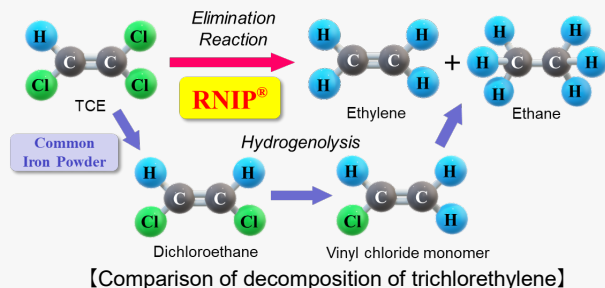
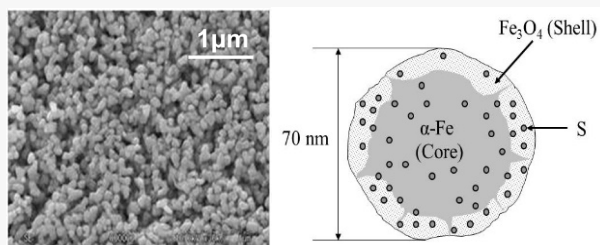


[In-situ injection method]

Since RNIP® has high reducing efficiency and increases the rate of decomposition, it suppresses the preparation of harmful chlorides generated during the decomposition of TCE by common iron powder. Also, RNIP® makes heavy metals harmless by ingesting them as insoluble compounds into its surface.

APPLICATIONS

- Purification of small/medium-sized spaces.
- Purification of operating factories, under-buildings and boundary areas.
- Purification of deep polluted places.



RNIP is a registered trademark of TODA KOGYO CORP.

