

Product

Green  Acid by

WATCHER<sup>®</sup>

A Water Company

# CATALYZED ACID<sup>™</sup>

(LIQUID CONCENTRATE)

## Boosting Cleaning Effects

### Green Acid

**Green Acid** is a **Dark-Red** liquid with a concentration of 100% chemical formula of  $\text{CH}_3$  catalyzed to a non **hydrogen atom** and attached to sulfonic acid by alkaline salts and esters to form **Green Acid**. It is the most hydroscopic in its concentrated form. **Green Acid** can dissolve almost all of metal salts because of high **Anion** content ( $-\text{SO}_2$  group). **Green Acid** is much stronger than Hydrochloric Acid (HCl) or Sulfuric acid ( $\text{H}_2\text{SO}_4$ ). **Green Acid** can be used as a Catalyst in organic reactions because it is 100% **NON-VOLATILE**, this is one of its major benefits that **Green Acid** is soluble in all **Organic Solvents**. **Green Acid** is Non-Oxidizing.

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### Description

In organic chemistry and biochemistry a catalyst can transfer group of atoms substituted in place of **hydrogen atom** (H) on a parent chain of hydrocarbon (CH). The catalyzes of suffix-"yl" is used when naming organic compounds that contain a **single bond** replacing one hydrogen -"ylidene" and "ylidyne" are used with double bonds and triple bonds. The suffix-yl is used in organic chemistry to form names of **radicals**, either separate or chemically bounded parts of molecules. These molecules are named as "Methylene" and in a short methyl of suffix-yl catalyzed by a strong catalyst. The suffix-yl has been named by catalyzing it from "Methyl"- $\text{CH}_3$  is a Methyl group one single bond to a NON-HYDROGEN ATOM.

### GREEN ACID CHEMISTRY

**$\text{CH}_4$  = (Methane) No Bonds**

**X = Electro negative**

**substituent of halides**



## The efficient de-scaling solution for

*Watch-Water® Scale Solutions business offers a unique range of Green Chemicals and technologies to improve process efficiencies where Water is involved.*

Our offer includes RED-OXY reagents, equipments **RED<sup>X</sup>**, process technologies for applications such as SOLID/LIQUID separation, filtration and Heavy Metals removal and organics handling.

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### Green Acid:

Watch-Water® understand Scale Problem better than any other company. Scale is a common problem in every industry and operations. Scale formation in pumps, pipelines, tanks, Heat Exchangers, Boilers, Cooling Towers and mining operations – results in reduced flows, increased energy costs, decreased heating or cooling efficiency and

### Costly Downtime for Cleaning and Scale Removal

Watch-Water® has solved the problem of scale formation by the appropriate use of **I-SOFT** and Added Biocides and Oxygen Scavengers- but before you chose our products you must clean your equipments off the existing scales.



### Removing Scale with Green Acid

Stop using traditional dirty strong mineral acids like Hydrochloric acid (HCl), Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) or Phosphorus acids. These acids have destroyed the world environments. Green Acid is a product well suited to every application because it is a very strong which contains

- **Scale Inhibitors**

- **Corrosion Inhibitors** including
- **Trace Color** to take the maximum

efficiency from its strength, while it's not

corrosive and safest to handle than any traditional acids in the market. This acid can de-scale any thing! Anything you just want neat and clean, fast and safe without damaging your and your future generations environment. And now **Green Acid** is available to water treatment industry!

**Note: Green Acid is Oxidant-resistant**

# cleaning industry with Green Acid

*Green Acid (100%) is a high purity, high grade of SCALE-OVER™ manufactured by Watch-Water® oxidation process. This proprietary technology offers a number of significant benefits over any acid cleaner in the world.*

## Some of many benefits

- **Low toxicological risk:** with **Green Acid** there is no risk of toxicology, as it is free of halogens (chlorine), nitrogen and phosphorus. **Green Acid** does not contribute chlorides and sulfates like hydrochloric acid and sulfuric acid.
- **Does not contribute to eutrophication** and algal growth: As **Green Acid** contains no phosphorus or nitrogen it does not contribute Phosphates and Nitrates to aquatic ecosystems. Due to its resistance to Oxidation, it has a lower COD than readily oxidized organic acids such as acetic acid, citric acid acids ending with **-ic**.
- **100% Biodegradable:** **Green Acid** is readily biodegradable according to OECD guidelines 301 and 306, forming carbon dioxide, water and biomass as degradation products.
- **Odor free:** Safe while using the low vapor pressure of **Green Acid** means that unlike other Inorganic or Organic acids it is odor free.
- **No gas phase corrosion:** All acids are volatile acids, such as hydrochloric acid, nitric acid or formic acid, the low vapor pressure of **Green Acid** means that it does not produce gas phase corrosion in building, home or industry. **Green Acid** does not produce **TOXIC VAPORS** and is safer and simple to handle.

## Chemically stable

**Green Acid** by Watch-Water® is a **Non-Oxidizing** acid cleaner which makes it safer for handling and suitable for any acid cleaning applications. It is formulated with scale inhibitor, corrosion inhibitor, color indicator including a high grade surfactant to provide 100% strength, optimal performance in de-scaling cleaning **SENSITIVE ALLOYS**.

**Green Acid** can be used in strongly oxidizing environments and in the presence of oxidizing agents without getting decomposed. **Green Acid** does not contain any phosphates or phosphonates- these environment polluting chemicals do not exist in **Watch-Water Chemistry**.

**Lets protect our home**



**from Chemical Pollution**

## Only One Cleaning for Descaling – Derusting - Biocleaning

*Only 5% of **Green Acid** can Remove severe calcite scale, gypsum, calcium phosphate and calcium oxalate scales just in few minutes. **Green Acid** can de-rust any equipments made of any metals because it contains the best Biodegradable corrosion inhibitor.*

### Biocleaning of surfaces

Biocleaning of any equipment or surface **Green Acid** can be utilized with Hydrogen peroxide which is often utilized for disinfection of water tanks. The application of removing Iron Scale, Manganese scale in all reservoirs for water. Hydrogen peroxide can be sprayed prior to **Green Acid**. You will be surprised that you have never seen a surface so clean without any damage or safety hazard to site personnel.

### Green Acid formulations

Our Worldwide customers are looking for concentrate formulations and instant dosing product to save costs to transport water, which is 90% or more of finished product. Our formulations to fight effectively the problem of scale, deposit of solids, corrosion, bio-fouling and all kinds of impurities in water. Watch-Water® provides the most advanced concentrate solutions and services to formulators and service companies making us the **FIRST PREFERRED PARTNER** for companies involved in water treatment as "The Water Company".

### Solution strength

**Green Acid** in **SCALE-OVER™** (finished product) is 10% solution as the active acid. **Green Acid** is a 100% active solution as supplied. A dilution factor of 10% gives a 10% **SCALE-OVER™** solution. Concentration can be varied to provide an adequate amount of reagent and a suitable volume of solution to ensure adequate **contact time**.

### Contact time

Depending on the scale composition and site specific conditions the required contact time may vary from a few minutes to few hours. Compared to all other acids, **Green Acid** is not corrosive: if long contact time is applied, the corrosion rates of **Green Acid** are still zero. Never compare all other acids like Sulfuric Acid or Hydrochloric acid even nitric, formic or citric acids. The corrosion impact is zero because of high purity corrosion inhibitor in its formulation.

#### Distributed by:

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