



# Acid Safe Indicating Sorbent Neutralizer Technical Data Sheet #AN3000

**Do Not Use Acid Safe On Hydrofluoric Acid (HF) or on compounds containing (HF)**

## Acid Safe Compatibility and Capacity Guidelines

Acid Safe was developed as a battery acid indicating sorbent neutralizer. Testing beyond the scope of sulfuric acid (battery acid) is limited. The following is a partial listing of chemicals tested under normal conditions and found to be safe for use with Acid Safe compound.

Acetic Acid—Glacial	Lactic Acid
Chromic Acid	Lauric Acid / Eion
Citric Acid	Maistic Acid
Formic Acid	Phosphoric Acid
Hydrochloric Acid	Nitric Acid
Sulfuric Acid (Battery Acid)	Nitric Acid—Red Fuming
Nitric Acid—White Fuming	

*Note: It is the users responsibility to verify and test compatibility of the liquid to be neutralized and to assure that proper safeguards are taken to insure safety of personal and equipment.*

Acids are aggressive and corrosive chemicals. Avoid breathing an acid mist or having it contact your eyes or skin. Acids are extreme irritants that can do permanent damage to eyes, lungs and skin. Only properly trained and qualified personal should undertake the clean up of acidic liquids. Always wear proper personal protective equipment (PPE) before getting near the spill area.

Personal protective equipment in accordance with 29 CFR 1910-134 must be employed by the individual performing the clean up. (splash proof goggles, full face shield, apron, gloves and boots) After neutralization, allow compound to cool prior to picking up. Once cooled, simply sweep up and dispose of in accordance with local, state and federal regulations.

*Avoid the use of baking soda or soda ash; both of these produce a vigorous, non buffered reaction that can produce an asphyxiating cloud of carbon dioxide. Neither is able to absorb the spill.*

Type	Concentration	Acid Safe Weight	Neutralized/Absorbed <small>(US Gallons, range varies based on concentration)</small>
Hydrochloric Acid	10% - 50%	20 Lbs	.5 - 2
Sulfuric Acid	10% - 20%	20 Lbs	.6 - 2
Nitric Acid	10% - 40%	20 Lbs	.4 - 2
Acetic Acid	10% - 40%	20 Lbs	1.6 - 2
Phosphoric Acid	10% - 40%	20 Lbs	.9 - 2

Note: These application rates are provided for your use as guidance only. Many factors like volume, geometry, environment, operator training and chemistry that greatly effect the application rate.



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November 5, 2012  
Lab No. 12E-2246  
Invoice No. 157868  
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**Attention: Jim Callaham**

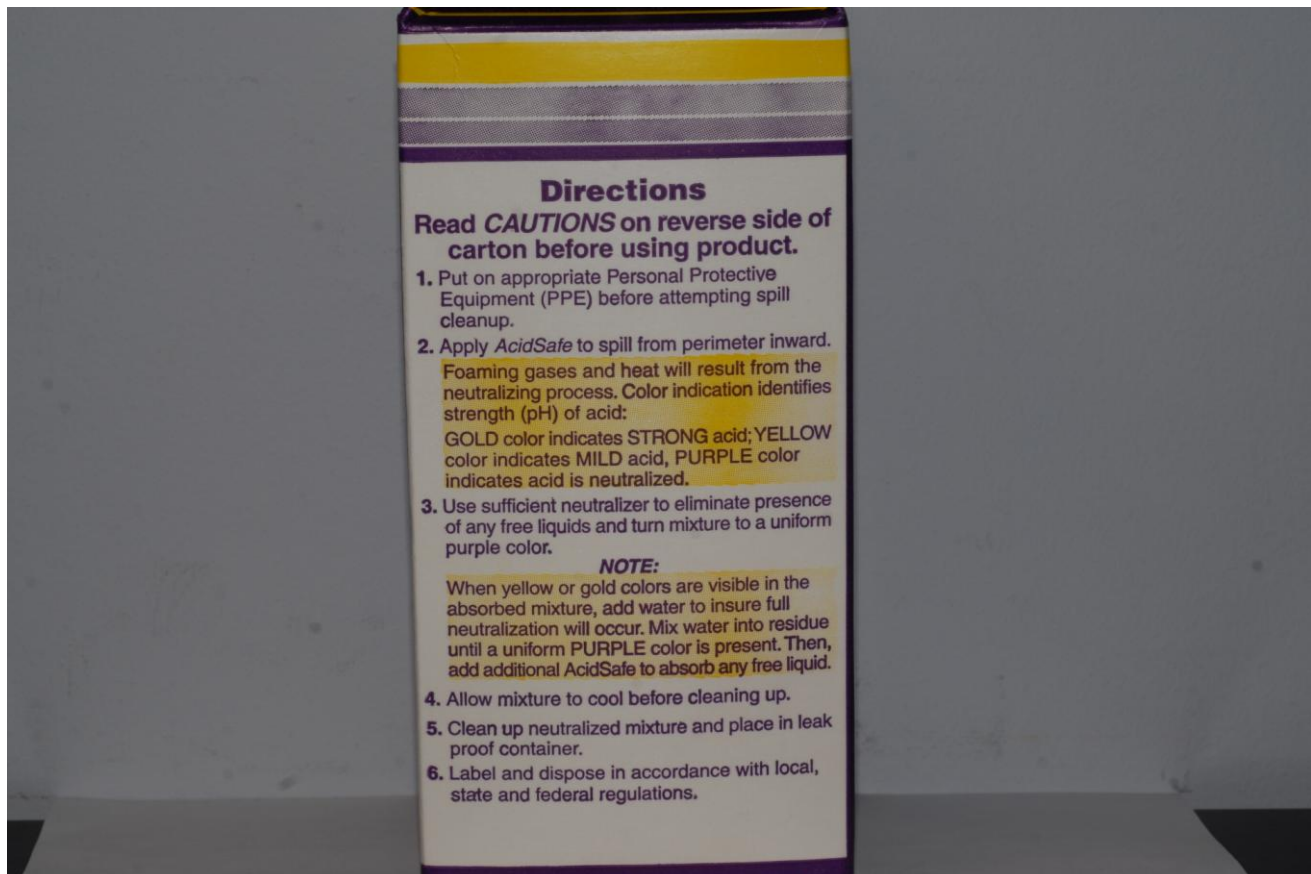
## REPORT OF TESTING

**MATERIAL:** "Acid Safe" Acid Neutralizing Sorbent  
ID: AN3002-1022121

**SUBJECT:** Acid Neutralization Analysis

### PRELUDE:

A series of tests were conducted for the performance, observations, and neutralizing capabilities of the submitted acid neutralizing sorbent. The requested medium for the analysis was 40-60% sulfuric acid. All the testing was conducted using diluted reagent grade sulfuric acid measured by acid/base titration to be 9.80 molar or 53.3%. Testing was done in accordance to labeled directions (See Photo Below).





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## REPORT OF TESTING

### 1.) QUANTITY OF SORBET NEEDED TO NEUTRALIZE TEST ACID TO pH 6.5-7.5

A known quantity of Neutralizer was suspended in deionized water and titrated with the test acid until the pH reached 6.5. This was determined to be 2.43 grams of neutralizer per 1 ml of 53.3% sulfuric acid. This correlates to 20.28 pounds per gallon of acid (lb/gal).

### 2.) QUANTITY OF NEUTRALIZER NEEDED TO DRY THE SPILL (DRY POWDER LEFT, NO FREE LIQUIDS)

A known amount of the acid was placed in a large evaporating dish with the amount of neutralizer needed according to the previous titration performed. This amount of neutralizer was also sufficient to absorb the acid. However, the instructions called for adding water and mixing to complete the neutralization process. Additional neutralizer had to be added in order to dry the spill. The total amount of neutralizer required for both neutralization and drying the spill was determined to be 2.76 grams of neutralizer per 1 ml of 53.3% Sulfuric Acid. This correlates to 23.03 pounds per gallon of acid.

This analysis was performed in conjunction with test no.'s 3 thru 6 below.

### 3.) COLOR CHANGE

The color change (a golden yellow) for un-neutralized areas of the spill and the purple color indicating that the spill was neutralized was obvious and clearly visible.

### 4.) TEMPERATURE RANGE SEEN DURING NEUTRALIZATION

The highest temperature occurred when the neutralizer was initially added to the acid. This was measured with an infrared thermometer to be 138 °F. The material returned to ambient room temperature after 5 minutes. Per the instructions, water was added and the neutralizer was mixed to complete the reaction. The temperature went back up to 85 °F. This returned to room temperature after 17 minutes.





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## REPORT OF TESTING

### 5.) TIME REQUIRED TO REACH A SAFE PH

The time required would be dependent on the size of the spill. The spill size we tested 20 ml. of acid. The Neutralizer was added slowly over the course of 15 seconds. The initial reaction and absorption was complete in about 30 seconds. Additional water was added with mixing until reaction was complete. This took another 30 seconds. Additional Neutralizer was added to dry the spill. The total time for neutralizing and drying was under 2 minutes.

### 6.) OFF GASSING THAT OCCURS AND OBSERVATION OF AND SPLATTERING OR FIZZING WHEN ADDING NEUTRALIZER

The Neutralizer fizzed and bubbled when initially added to the acid. However, this took place in a relatively slow and controlled fashion. The neutralizing compound used in this product is sodium carbonate. This can be calculated to evolve 240 ml. of carbon dioxide (CO<sub>2</sub>) per 1 ml 53.3% Sulfuric Acid neutralized. This can be correlated to 32.1 cubic feet CO<sub>2</sub> gas per gallon of acid.

SR/krm

Steve Root, Manager  
Environmental Testing

