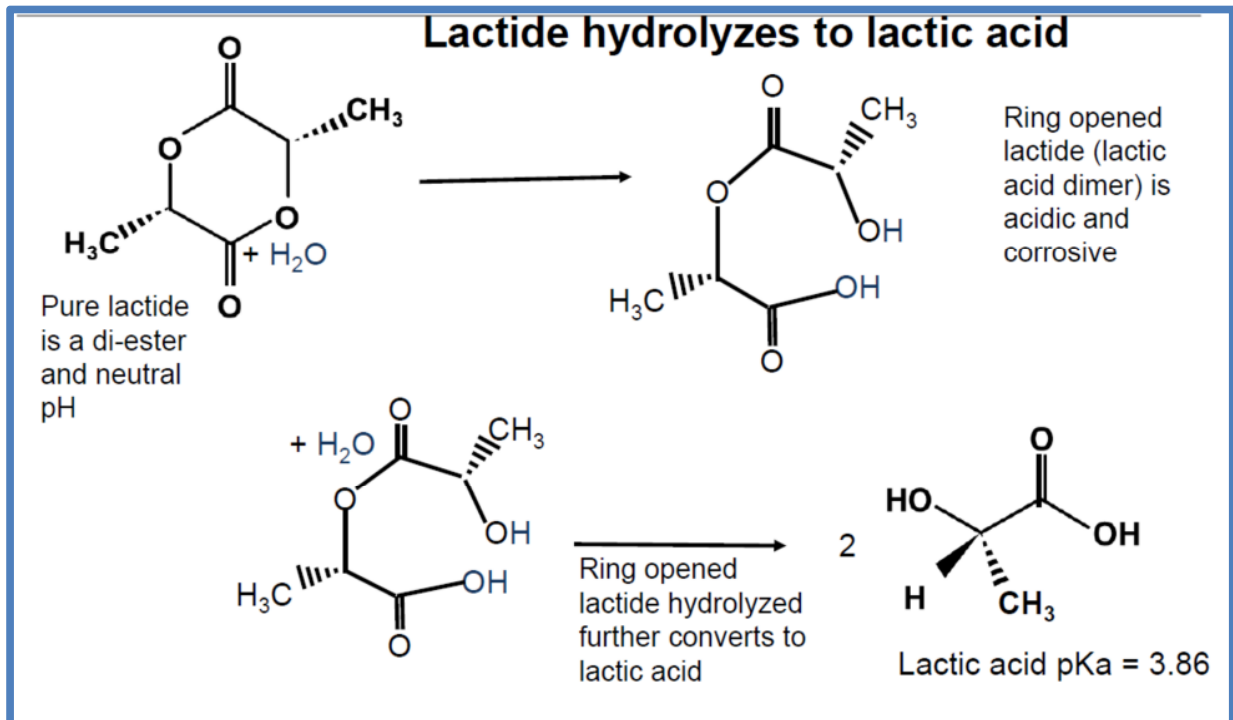


Corrosion by Polylactic Acid

Acid Scavenger Solutions for PLA

Processing and fabrication of PLA (Polylactic acid) has been and continues to be problematic. Recent conferences on the subject divulged many issues in corrosion of equipment and expensive alternatives. Below are photos of the corrosion shown and chemistry of lactic acid production.



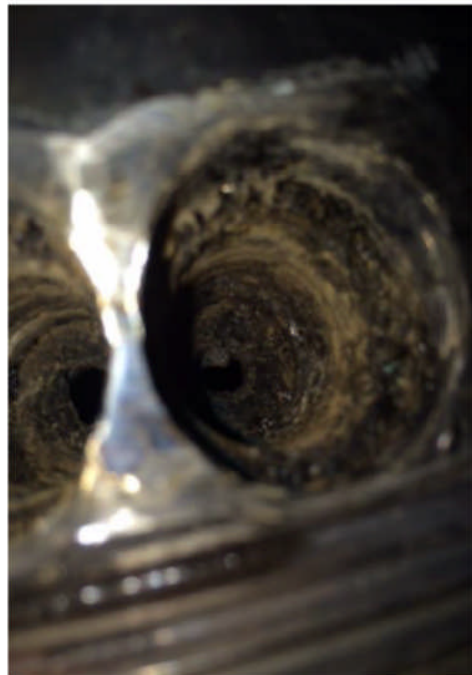
Official pKa for lactic acid is 3.08 and that of citric acid 3.10 while stearic acid is 10.15 and we all know what free stearic does to insert molds from polyolefins contain metallic stearates!

Carboxylic acids are corrosive especially when they are heated and in contact with metals that corrode.

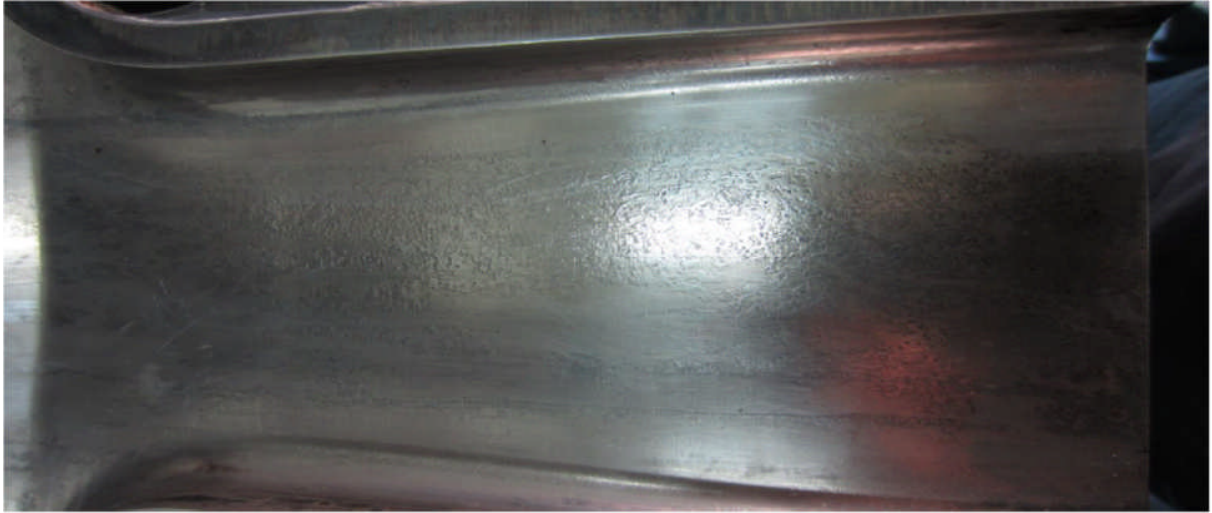
Filter piston of extruder:



Equipment:



Standard Tool Steel Die unprotected:



Improper drying and stagnant locations corrode rapidly:



Although PLA is used in medical applications corrosion inhibitors and acid scavengers commonly used in other polymers cannot be integrated into PLA or for that matter into polyolefins for internal use in the body.

Approval for any additives in plastics for internal use in humans is expensive and problematic therefore most plastics contain nothing.

For those applications where PLA is NOT being used for medical applications the use of UVITA PLA PLUS

An acid scavenger specifically used as transition and shut down purge and can be back integrated into PLA at the source acts to control formation of the acid and buffer the acid produced thereby scavenging the acidic properties and controlling corrosion.

UVITA PLA PLUS comes as a masterbatch from Endex International, Ajax Canada. The same product can be used for Saran (Polyvinylidene chloride (PVDC)**), to buffer acid scavenging and control degradation products.**

