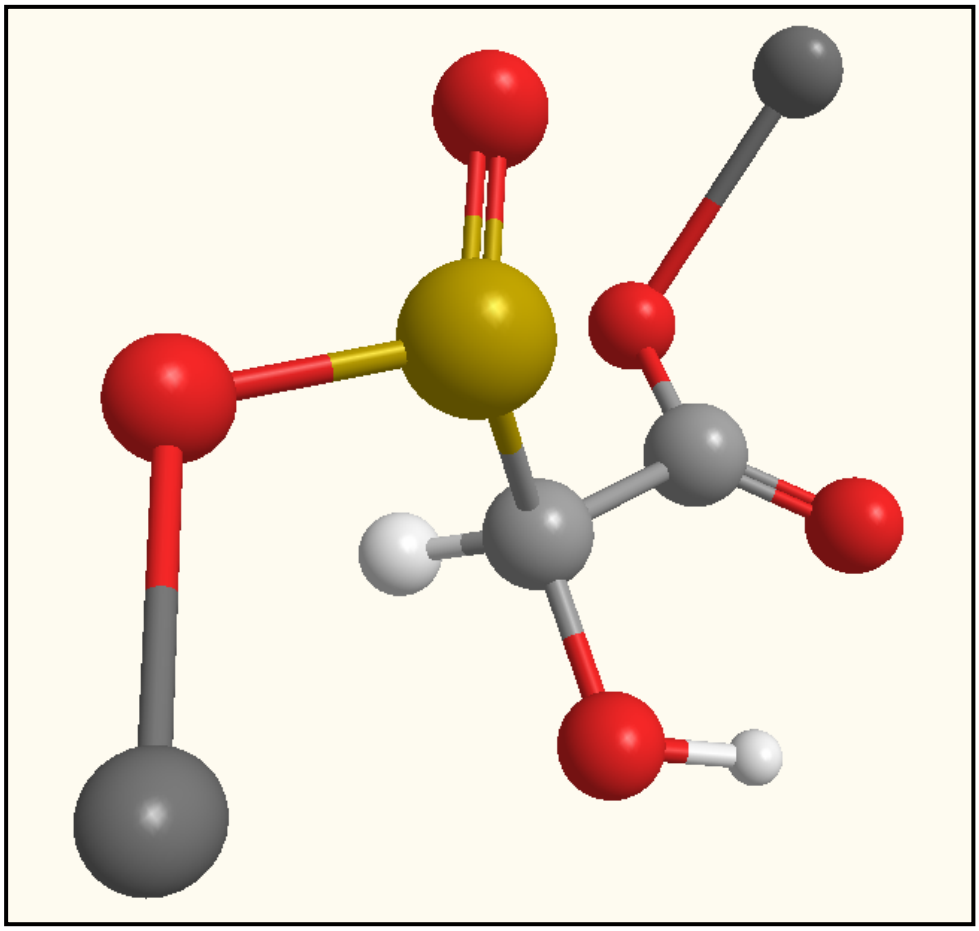
Bruggolite®FF6 M



General Information
&
Technical Overview

Brüggemann Chemical
L.Brüggemann Kommanditgesellschaft

At a Glance

	SFS*	Ascorbic Acid	Bruggolite®FF6 M
Reactivity	+	–	++
Residual Monomers	–	–	+
Discoloration	+	–	+
Formaldehyde release	–	+	+
VOC release	–	+	+
Reproducibility	+	–	+
pH application range	–	–	+

* Sodium Formaldehyde Sulfoxylate

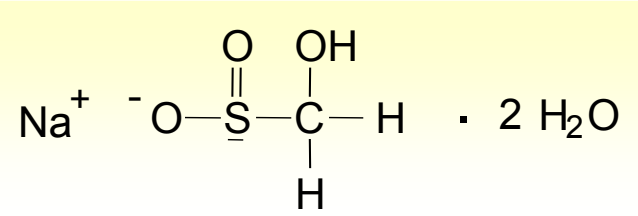
Only the best of both worlds

Bruggolite®FF6 M

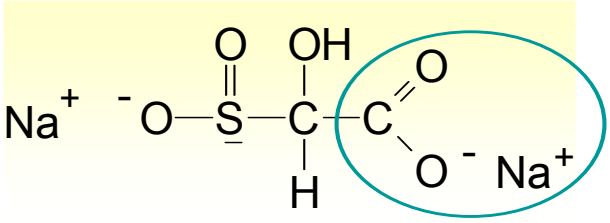
Combining the advantages, leaving out the disadvantages

Higher Reactivity

Similar Chemistry – Increased Performance



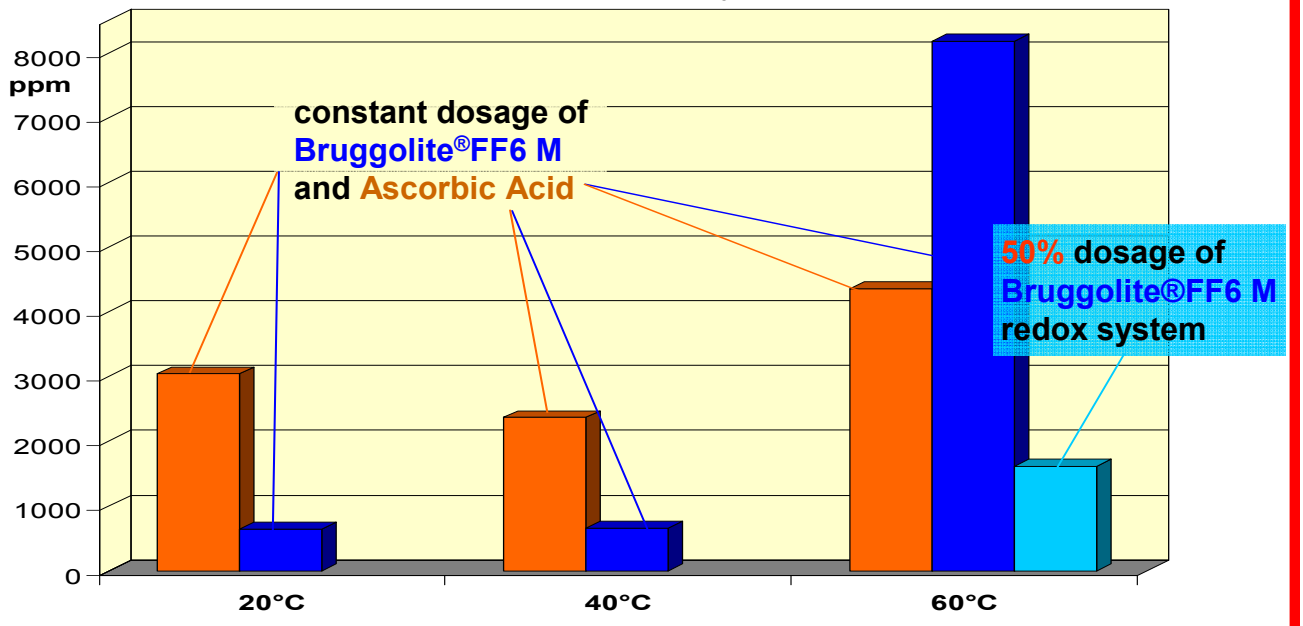
Sodium Formaldehyde Sulfoxylate



Bruggolite®FF6 M

Higher Performance with lower dosage

Residual Monomer Levels of Vinylacetate

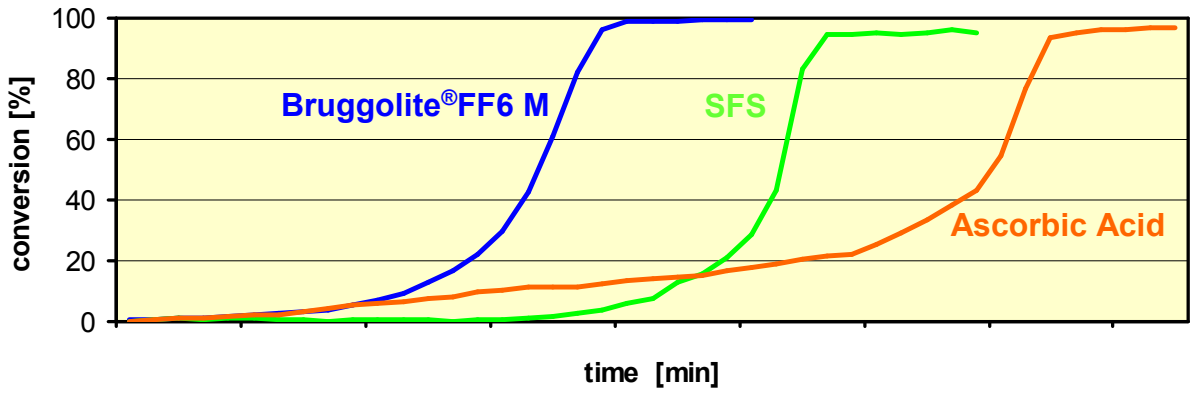


Tested with all common oxidizing agents

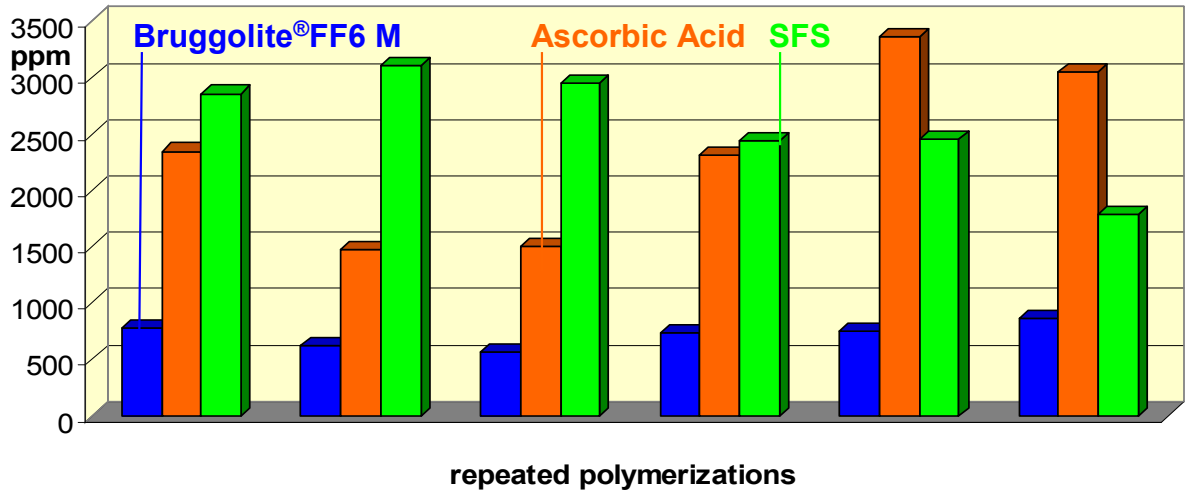
Tested in main- and post-polymerization

Vinylacete Model-System

Main Polymerization



Residual Monomers

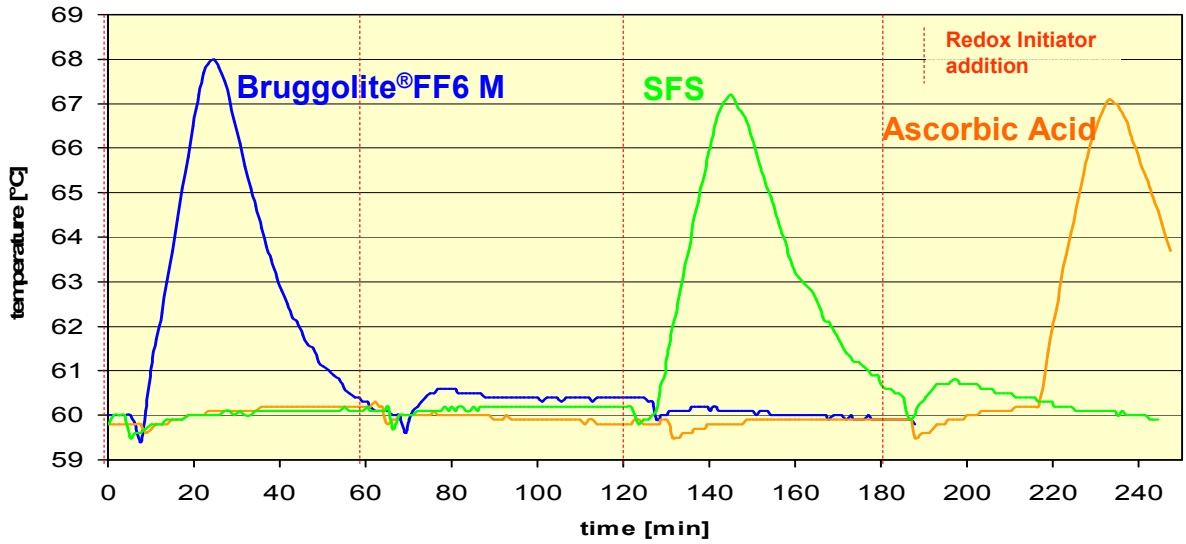


Lower residual monomer levels

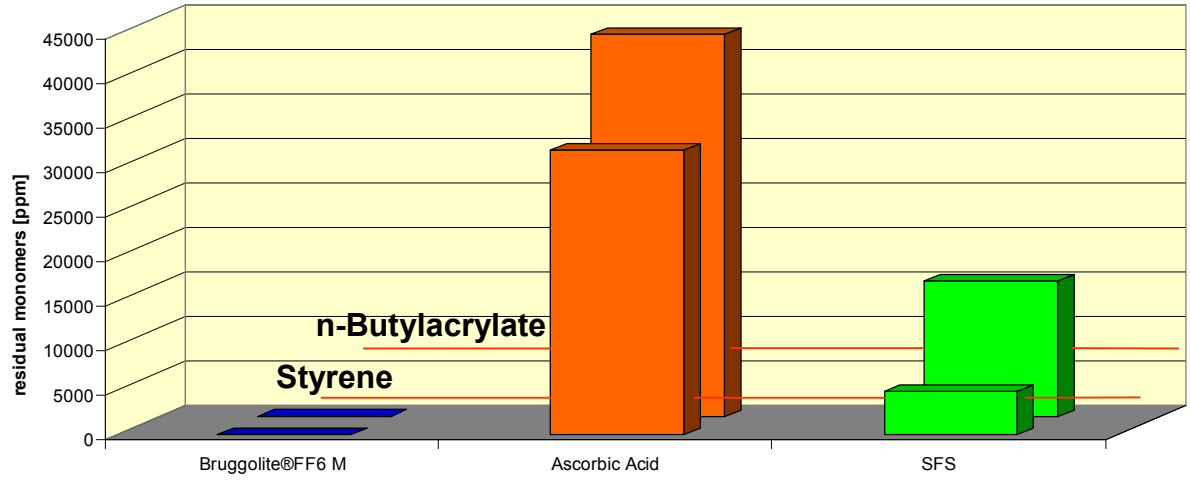
Constant performance

Styrene-Acrylat Model-System

Main Polymerization



Residual Monomers

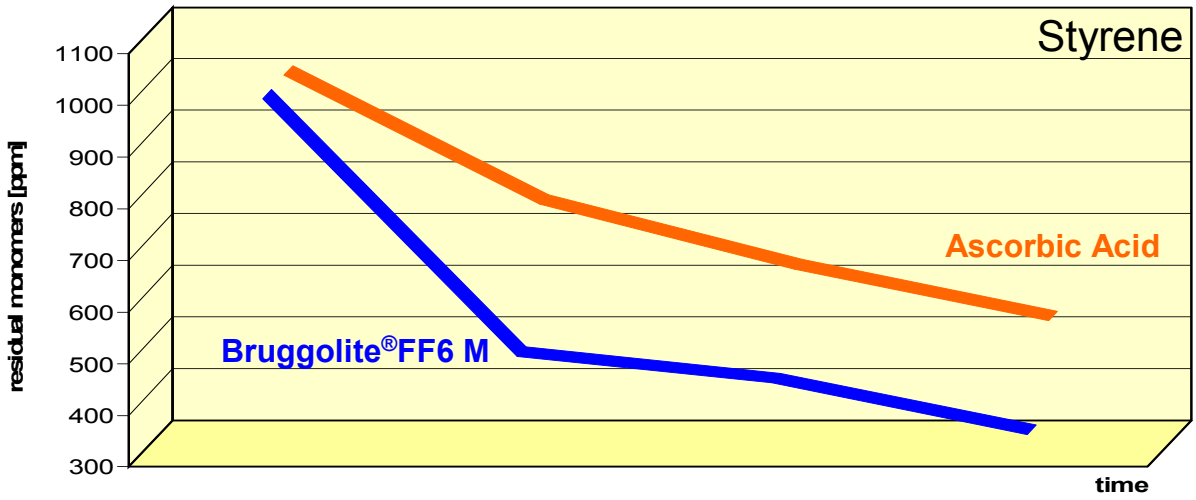


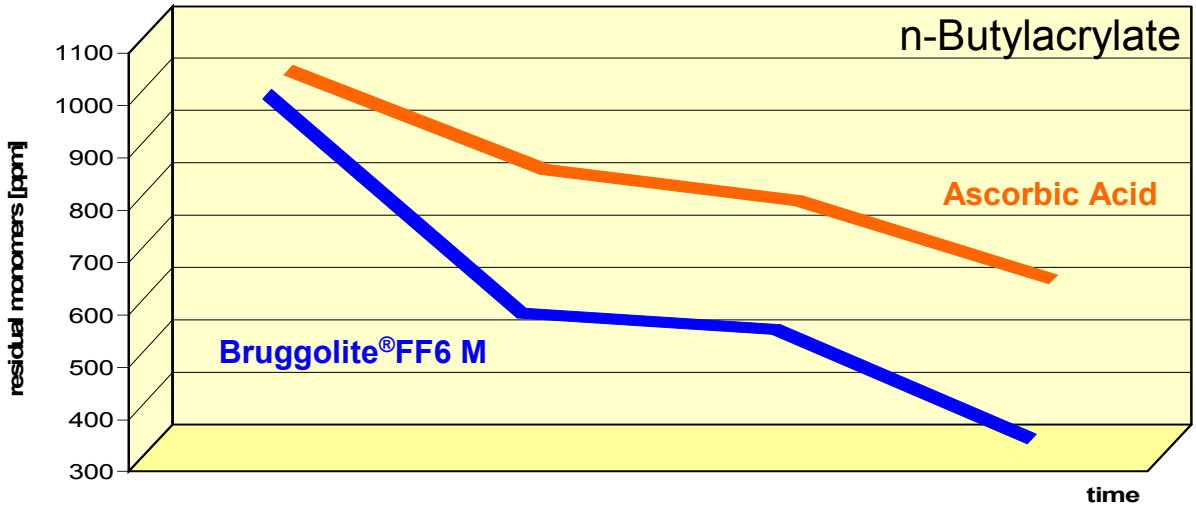
Less redox-initiator required

No transition metal needed

Styrene-Acrylat Model-System

Post Polymerization





Increased efficiency at same conditions

Less residual monomers in less time

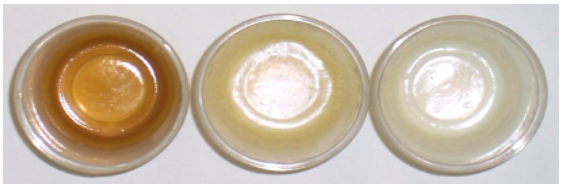
Discoloration of the Polymer

Vinylacetate Main Polymerization

3 days 30 °C	2 hours 50 °C	2 hours 75 °C	1 hour 100 °C	1 hour 120 °C

Ascorbic acid

Bruggolite®FF6 M



Ascorbic Acid / Iron salt

Bruggolite®FF6 M / Iron-salt

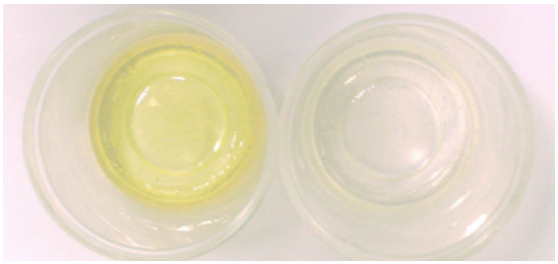
no Iron-salt

Styrene-Acrylate Main Polymerization

3 weeks 40°C

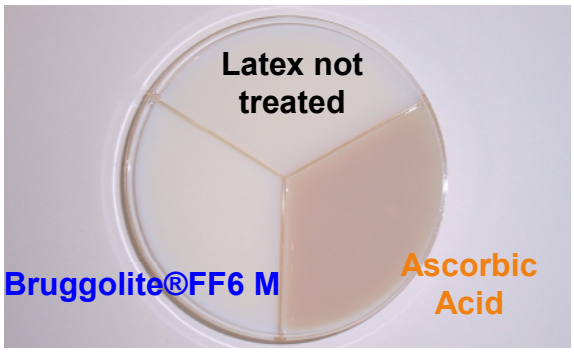
VeoVa™ Post Polymerization

24 h / 50°C



Ascorbic Acid

Bruggolite®FF6 M



Styrene-Acrylate Post Polymerization

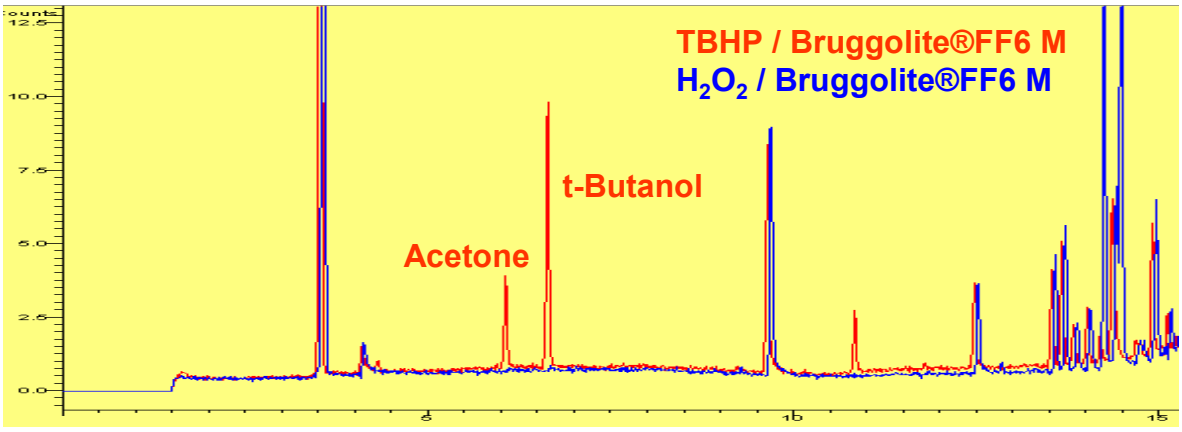
1 h / room temperature

VOCs from TBHP

TBHP generates Acetone and t-Butanol

Insufficient reactivity of H_2O_2 with SFS or Ascorbic Acid

Bruggolite®FF6 M & H_2O_2 with good performance at lower temperature



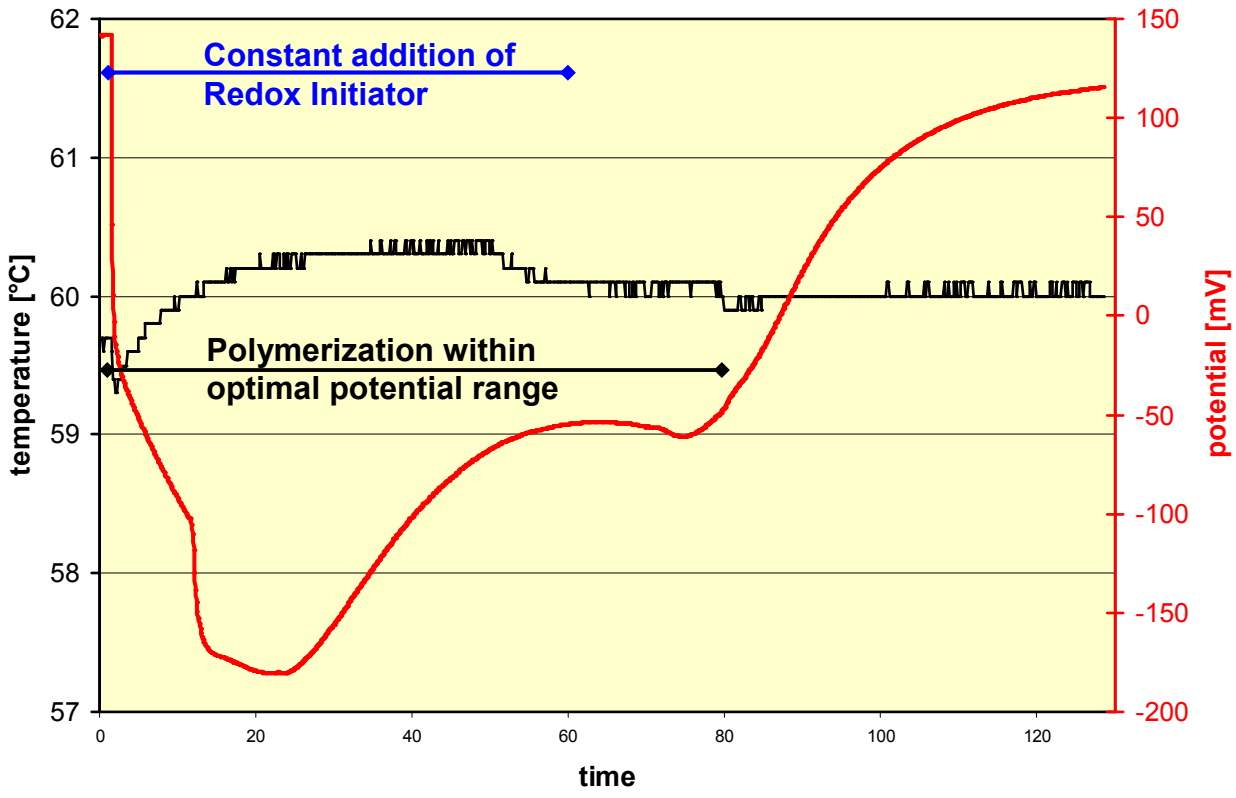
Redox Measurement

Radical availability necessary for reaction

Optimal redox potential range required

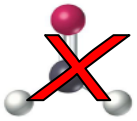
Individual range for each system

In-process redox measurements possible



Regulatory Issues

No Formaldehyde is released



No VOCs from Bruggolite®FF6 M

Harmless Chemical

Dust free, fast dissolving microgranules

Registered under EU policy REACH

Listings for most inventories

EU (REACH)	USA (TSCA)	Canada (DSL/NDSL)
Japan (ENCS)	South Korea	China

World-wide patent protection

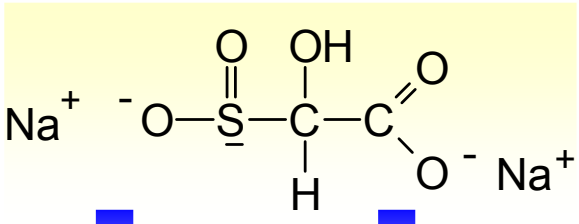
FDA Food Contact Notification

FDA chapters			
§175.105	§177.2600	§176.170	§176.180

Chemical Details

First successful Sulfinic Acid since 1906

Bruggolite®FF6 M



$NaHSO_4$ ← [$NaHSO_2$]

HOC-CO_2Na → **CO_2 + HCO_2Na**

Only harmless reaction products

Positive effect of transition-metals

- Performance increase in some systems by Fe-salts or similar

Applicable over a wide pH range (pH 3 -10)

Packaging and Stability

Packed in heat sealed 25 kg PE bags

Stability at least 1 year in unopened bags

500 kg as standard order size

Cool and dry storage recommended

Stability of aqueous solution

- Lower with reduced concentration
- Recommended use within some days

Contact

For further information please contact: