



COMPATIBILIZATION OF SAN AND SHORT-CHOPPED GLASS FIBERS WITH GRAFTABOND

INTRODUCTION

Styrene Acrylonitrile Copolymer (SAN) and glass fiber (GF) composites can be improved by using additives that combine both SAN and GF.

For this purpose we can use SAN or ABS, grafted with maleic anhydride.

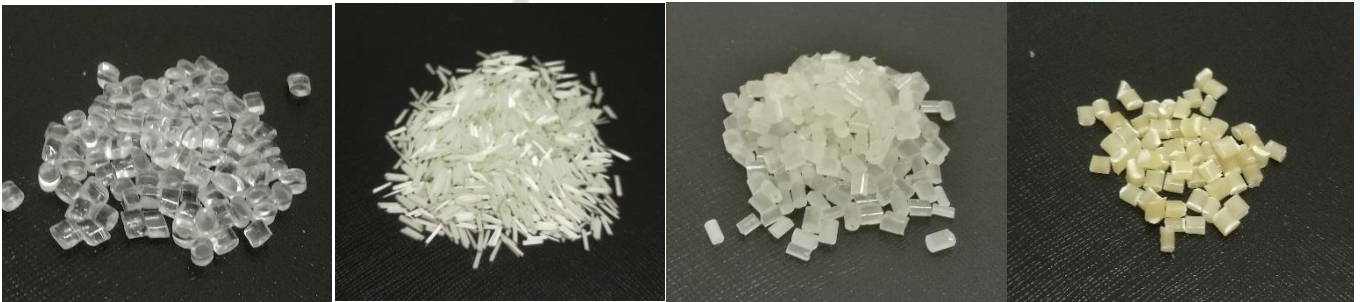
MATERIALS USED

Pictures from left to right:

SAN Matrix: SAN 82 TR, LF Chemicals

Glass fibers: ThermoFlow 601

Coupling agents: GRAFTABOND SAN-MAH 01530 C and GRAFTABOND ABS-MAH 01510 C



The following mixtures were prepared:

- Base mixture SAN + 30% GF
- + 2%, 5%, 10% of GRAFTABOND SAN-MAH 01530 C
- + 2%, 5%, 7%, 10% of GRAFTABOND ABS-MAH 01510 C

SAMPLE TESTING AND PREPARATION

Mixtures and samples were prepared:

- Twin screw extrusion of SAN with GF and compatibilizer
- Injection molding of specimen for mechanical tests
- Tensile test (ISO 527-2)



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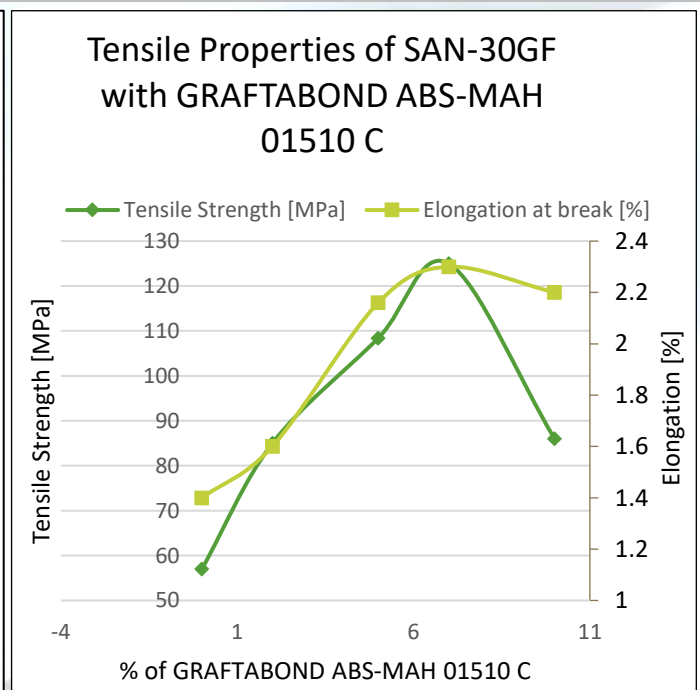
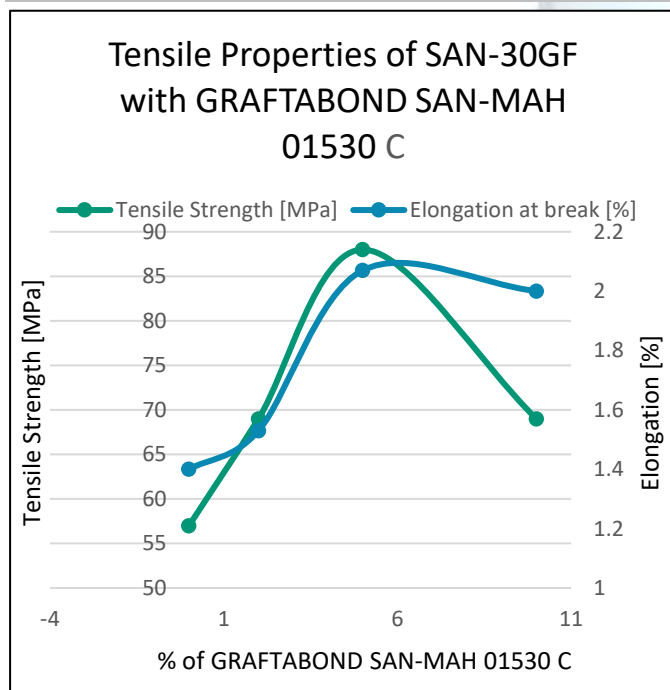
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Material Report

Glass Fibers [%]		GRAFTABOND ABS-MAH 01510 C [%]	Tensile Strength [MPa]	Elongation at break [%]
30	-	-	57	1,40
30	2	-	69	1,53
30	5	-	88	2,07
30	10	-	69	2,00
30	-	2	85	1,6
30	-	5	108,4	2,16
30	-	7	125	2,3
30	-	10	86	2,2



CONCLUSIONS

By using coupling agent **GRAFTABOND SAN-MAH 01530 C**, with SAN-30GF we **increase**:

- **Tensile strength** by around **50%**
- **Elongation** by around **50%**
- If application requires **transparent SAN**, it's better to use this grade
- Optimal dosage is between 3-5% - depending on application, dosage should be determined experimentally

By using coupling agent **GRAFTABOND ABS-MAH 01510 C**, with SAN-30GF we **increase**:

- **Tensile strength** by around **100%**
- **Elongation** by around **50%**
- GRAFTABOND ABS-MAH 01510 C is best used when using **colored/non-transparent SAN**
- Optimal dosage is between 5-7% - depending on application, dosage should be determined experimentally

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