



Zetag™ 92 Series of Flocculants

External Communication: Q&A

1. Why did Solenis launch the new Zetag™ 92 Series?

Developed in collaboration with our R&D scientists, the new Zetag™ 92 Series has a significantly reduced foaming tendency, good shear stability and an extended shelf-life – now 12 months versus the previous six months. This rationalization of the product portfolio reduces customer order complexity and simplifies the manufacturing process for Solenis resulting in supply chain benefits. The move to the new range also helps secure our global raw material supply and provides lower investment cost required for future capacity expansion.

Customers can expect the same, in some cases, an improved level of performance irrespective of whether product mixing is achieved in-line (static or dynamic mixing) or in polymer make-up systems.

2. Which products are available on the new range and in what packs?

There will be a total of nine new cationic products in the Zetag™ 92 Series – see below table.

New Product	Charge	Molecular Architecture
ZETAG™ 9214-DE	Low Cationic Charge	Linear
ZETAG™ 9216	Medium Cationic Charge	Linear
ZETAG™ 9246FS		Medium-Structure
ZETAG™ 9266FS		High-Structure
ZETAG™ 9218	High Cationic Charge	Linear
ZETAG™ 9248FS		Medium-Structure
ZETAG™ 9268FS		High-Structure
ZETAG™ 9219	Very High Cationic Charge	Linear
ZETAG™ 9249FS		Medium-Structure

For each product there will be four pack types available:

- Bulk Tanker
- IBC (1040 KG)
- Pail (25 KG)
- Sample (50 ml).

Packaging specifications are available on request and are subject to supplier variations.



3. Where can I access the Safety Data Sheet (SDS) and Product Data Sheet (PDS) documents for the new Zetag™ 92 Series range?

A full list of SDS and PDS documentation is available on request via our customer service team.

4. Will training material be provided?

Yes, full training will be provided, and a training package is being prepared. A sales representative will be in touch with you to roll out the training.

5. When will the Zetag™ 90 and 91 Series be phased out?

We are currently working with our customers to switch existing business to the new range. We will allow customers time to make the full swap across to the Zetag™ 92 range. We expect that by March next year we will have converted most customers and that we can begin to deactivate the item numbers associated with the Zetag™ 90 and 91 Series.

6. How does the total solids content of the Zetag™ 92 Series compare with the existing product ranges?

The answer depends on the cationicity of the Zetag™ 92 product. For the high and very high cationic charge products, the total solids are in the same range as the Zetag™ 90 and 91 Series products (i.e. 45 – 50 % w/w). For the medium cationic charge products, the total solids range is slightly lower at 40 – 45 % w/w.

7. Are the new Zetag™ 92 Series products more viscous? Will that cause issues for the end customers or for Solenis's production?

The viscosity specification of the Zetag™ 92 range of products has an upper limit of 3,000 cPs. This is more than the 1,400 figure for the Zetag™ 91 Series but considerably less than the upper limit of Krefeld inverse emulsions which is 5,000 cPs. Krefeld has never had issues with this viscosity, therefore an upper limit of 3,000 cPs is fine, and this is backed up by successful customer trial results. To date Bradford has not experienced any production issues with the Zetag™ 92 Series. The actual viscosity of the Zetag™ 92 range is in the region of 1,800 cPs and so we plan to reduce the upper limit in the future.

8. What is the shelf-life of the new Zetag™ 92 Series products?

12 Months from the date of manufacture. This is double the shelf-life of the current inverse emulsion products from Bradford.

9. Are the Zetag™ 92 Series products compatible with the Zetag™ 90 and 91 range?

If a Zetag™ 90 Series product is mixed with a Zetag™ 91 product then it can detrimentally affect the shear stability of the latter. We advise our customers not to blend these two product ranges together. In terms of compatibility with the Zetag™ 92 range, we know that there are no shear stability issues when mixing with Zetag™ 91 products. However, we recommend you don't do this if foaming is an issue for



you. Using the pure Zetag™ 92 product will give the best results as the Zetag™91 range tends to foam. When making the switch from the Zetag™ 90 Series to the 92 Series we would recommend a thorough clean down of the system beforehand – typically with diesel or white spirit.

10. Do you have any data from case studies demonstrating the claimed performance?

We have trialed the new products at numerous customer sites and we have received very positive feedback. We are reviewing the data carefully and will develop case studies that will be available via the commercial team.