



**Construction
Industry
Chromate
Reducing Agent**

Lohtragon®

Crystallizing Solutions

Info Sheet Lohtragon®

Construction Industry – Chromate Reducing Agent

Construction chemicals are used with building materials such as cement and gypsum in order to optimize these formulations. The Lohtragon® metal salt range focuses on the following applications for the construction industry:

- ◆ Admixtures for cement (accelerators and retarders)
- ◆ Chromate reducing agents
- ◆ Retarders and crystal morphology modifiers for gypsum

Lohtragon® Info Sheets are available for each of these topics. Please get in touch with us for further details or discussing your individual challenge.

Chromate Reducing Agent for Cement

The elimination of chromate to the lowest level possible is a major target in the cement industry because of its Health, Safety and Environmental (HSE) relevance.

Hexavalent Chromium compounds (Cr(VI)) are classified as toxic, carcinogenic, and allergic so that their use is restricted by regulatory authorities. Cement materials (clay, limestone, Iron additives; e.g. in Portland cement) contain – amongst others – the trace element as hexavalent Chromium (Cr(VI)).

One way of eliminating HSE risks is to chemically convert the hexavalent Chromium (Cr(VI)) into trivalent Chromium (Cr(III)) which does not have a hazardous classification. This chemical reaction – the reduction from Cr(VI) to Cr(III) – should be done as complete as possible with the target to have no remaining Cr(VI) in the cement and without technical side effect on the cement and its final properties.

Lohtragon® Product Selector

Lohtragon® contributes to the requirements of the cement industry with specific products:

- ◆ Lohtragon® V01 | Type 703
- ◆ Lohtragon® V04 | Type 131

Features & Benefits

You benefit from using the Lohtragon® V01 by significantly improved HSE aspects while keeping the technical properties of the cement unchanged. In addition, you can establish an efficient process by using the aqueous solution, which allows energy saving processing, easy handling and exact dosing.

Key features and benefits of Lohtragon® V01:

- ◆ Ready-to-use liquid form
- ◆ Stabilized against premature oxidation and loss of functionality
- ◆ Stabilized aqueous solution shows a long retest period
- ◆ More homogenous distribution as spray on liquids in comparison to powders
- ◆ High reduction potential to ensure the maximum conversion of Cr(VI) into Cr(III)
- ◆ No side reaction with the cement or additives

In case your process requires a solid form of such reducing agent: we offer Lohtragon® V04 crystals in paper bags and fiber drums.

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Application Notes

- ◆ Various cements can have 30 ppm and more of Cr(VI), therefore analytical verification of water soluble Cr(VI) level is necessary to adjust exact dosage
- ◆ The following values are recommendations for 1mg soluble Cr(VI) which need to be verified depending on the type of cement, amount of Cr(VI) and process
- ◆ An overdosage of 5-30 times more than the stoichiometric minimum is mandatory due to unavoidable side reactions of Fe(II)
- ◆ **Lohtragon® V01** (Ferrous Sulfate Solution):
1 ml Lohtragon® V01 / kg cement for 1 mg of Cr(VI), (stoichiometric min. 0.04 ml)
- ◆ **Lohtragon® V04** (Ferrous Sulfate 7-hydrate):
130 mg Lohtragon® V04 / kg cement for 1 mg of Cr(VI) (stoichiometric min. 16 mg)

Product Description

Lohtragon® V01	
Product name	Lohtragon® V01 Type 703
Product number	522001002
Used substance	Ferrous Sulfate Solution
Metal content	approx. 7.5 % Fe(II)
Appearance	solution
Color	green - olive-green*
pH	2.0 – 2.5 (as is)
Chloride (Cl)	max. 0.1 %
Density (20°C)	approx. 1.2 g/ml
Retest period	12 months
Packaging	IBC (1,000 kg)

*The discoloration from green to olive-green during storage does not influence the effectiveness of the chromate reducer.

Lohtragon® V04*	
Product name	Lohtragon® V04 Type 131
Product number	522004002
Used substance	Ferrous Sulfate 7-hydrate
Assay FeSO₄*7H₂O	98.0 – 105.0 %
Appearance	crystals
Color	bluish-green
Ferric iron (FeIII)	max. 0.5 %
Lead (Pb)	max. 0.003 %
Copper (Cu)	max. 0.005 %
Zinc (Zn)	max. 0.05 %
Retest period	12 months
Packaging	Polylined paper bags of 25 kg net

*Please store this material always below 25 °C.

Contact

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Lohtragon® – A Brand of Dr. Paul Lohmann®

For over 135 years, the company Dr. Paul Lohmann has been able to establish and maintain its leading position as an international manufacturer of mineral and metal salts that meet the highest quality standards. The product range includes over 400 different salts, from Aluminum to Zinc, in a total of over 7,000 different specifications.

Dr. Paul Lohmann® supplies its specialty salts worldwide to customers in the pharmaceutical industry, food sector, food supplements, cosmetics and – under the Lohtragon® brand – to customers in industrial applications.

Lohtragon® represents unique competencies in manufacturing, optimization and development of metal salts for a wide variety of industrial market segments. Tailor-made for your application and your process - our solution to your challenges!

Established Products

By choosing Lohtragon® products, you benefit from direct manufacturer sourcing and our “Made in Germany” quality and reliability promise.

Joint Developments

From concept phase to tailored product optimization, we are your partner to solve any development challenge.

Expert Services

Rely on services from our R&D, application technology, regulatory affairs, logistics, quality departments and more. We fully support you in all areas.