

Specification

**Autoclave-ExitusPlus™**

**A7600**

<b>Product Code:</b>	A7600
<b>Product Name:</b>	Autoclave-ExitusPlus™
<b>Headline Comment:</b>	<ul style="list-style-type: none"> <li>• Autoclave-ExitusPlus™ is a registered trademark of AppliChem GmbH.</li> </ul>
<b>Specifications:</b>	<p><b>: ♦ Additive for autoclaving</b></p> <ul style="list-style-type: none"> <li>: • removes DNA and RNA contaminations from culture media waste</li> <li>: • for cleaning of culture vessels (e.g. Mini and Maxi prep)</li> <li>: • bottled <i>ready-to-use</i></li> <li>: • delivered as powder mixture</li> </ul> <p><b>: ♦ special, new features</b></p> <ul style="list-style-type: none"> <li>: • nonenzymatic degradation of DNA and RNA by catalytic and cooperative effects of the components</li> <li>: • All components of Autoclave-ExitusPlus™ are readily biodegradable and not harmful or toxic for humans.</li> <li>: • Does not contain aggressive chemicals</li> </ul>
<b>WGK:</b>	1
<b>Storage:</b>	RT
<b>CS:</b>	38220000

**AppliChem GmbH**

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**Comment**

The common view that autoclaving destroys nucleic acids completely shall be a thing of the past. For many researchers it is surprising to read that the autoclave is a major source of DNA contamination! As good the autoclave is suited to inactivate microorganism, as bad it is suited to remove and destroy nucleic acids (ref. 1-3). During autoclaving DNA molecules in recombinant microorganism become fragmented only and when opening the autoclave, DNA fragments are released with the vapour in large quantities. The statistic fragment size distribution is 1 to 2 kb, ideal for amplification in PCR reactions or for transformationen. Certain laboratories, especially those contamination-free working plays a decisive role, removed the autoclave from this working area. Addition of Autoclave-ExitusPlus™ to culture broth or buffer solutions will destroy nucleic acids effectively while autoclaving.1.) Catalytic and cooperative effects of the reagent components lead to a very fast, non-enzymatic, non-sequence-specific degradation of DNA and RNA molecules.2.) All component of the Autoclave-ExitusPlus™ solution are biodegradable and not harmful or toxic for humans.3.) No aggressive mineralic acids or bases are used. Thus, equipment and other materials won't be damaged or destroyed even after prolonged incubation.4.) Aqueous solution: does not contain organic solvents or volatile components, no toxic fumes generated.5.) Temperatures above approx. 50°C increase the reaction rate and effectiveness. Investigations have shown that at high temperatures, especially during autoclaving, the reaction rate is multiplied. DNA degradation and an "additional " sterilisation effect is achieved, even if the autoclaving temperature is not reached, e.g. because the autoclave is broken, settings are wrong, or if large quantities of liquid won't be heated to 120°C (e.g. missing temperature sensor within the liquid). In such cases, the additive provides additional security. **Delivery form:** Autoclave-ExitusPlus™ is provided as 6 portions of powder to treat 1 L of waste each (6L in total). Larger quantities are available on request.

**Bibliography**

(1)Elhafi, G. *et al.* (2004) *Avian Pathology* **33**, 303-306 Microwave or autoclave treatments destroy the infectivity of infectious bronchitis virus and avian pneumovirus but allow detection by reverse transcriptase-polymerase chain reaction.  
(2)Espy, M.J. *et al.* (2002) *Mayo Clin. Proc.* **77**, 624-628 Detection of Vaccinia Virus, Herpes Simplex Virus, Varicella-Zoster Virus, and Bacillus anthracis DNA by LightCycler Polymerase Chain Reaction After Autoclaving: Implications for Biosafety of Bioterrorism Agents. (3)Simmon, K.E. *et al.* (2004) *J. Microbiol. Methods* **56**, 143-149 Autoclave method for rapid preparation of bacterial PCR-template DNA.