

# Stability data for medications in the Easyflow® elastomeric pumps.

The following table summarizes the drug stability studies in the **Easyflow® Elastomeric Infusion Pump of Adriamed (Standard, DFO, R, RC Versions)**, extendable to the **Neopump®**, a trade variant of **Easyflow® Elastomeric Pump**.

The analysis to determine the stability of the drugs over time has been performed by external laboratories by liquid chromatography–mass spectrometry (LC–MS), an analytical chemistry technique that combines the physical separation capabilities of high-performance liquid chromatography with the mass analysis capabilities of mass spectrometry.

While liquid chromatography separates mixtures with multiple components, mass spectrometry provides structural identity of the individual components with high molecular specificity and detection sensitivity.

This technique is superior to UV-HPLC in term of sensitivity and because it allows the identification of possible impurities present in the sample.

Complete reports are available upon request.

## Drug stability table (Rev. 11 - 10.04.2025)

| Medication                     | Concentration                | Diluent | 4°C<br>(var <5%) | 25°C<br>(var <5%) | 32°C<br>(var <5%) |
|--------------------------------|------------------------------|---------|------------------|-------------------|-------------------|
| Acupan                         | 0.2 mg / ml (20 mg / 100 ml) | NS      |                  | 24 h              | 24 h              |
|                                | 0.8 mg / ml (40 mg / 50 ml)  | NS      |                  | 24 h              | 24 h              |
| Acyclovir                      | 10 mg / ml (1 g / 100 ml)    | NS      |                  | 24 h              | 24 h              |
| Amikacine                      | 2 mg / ml (0.5 g / 240 ml)   | NS      |                  | 24 h              | 24 h              |
|                                | 5 mg / ml (0.5 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
| Amoxicilline                   | 10 mg / ml (2.4 g / 240 ml)  | NS      |                  | 24 h              | 24 h              |
|                                | 20 mg / ml (4.9 g / 240 ml)  | NS      |                  | 6 h               | 6 h               |
| Amoxicilline + Clavulanic acid | 10 mg / ml (1 g / 100 ml)    | NS      | 24 h             | 12 h              |                   |
|                                | 12 mg / ml (3 g / 240 ml)    | NS      | 24 h             | 12 h              |                   |
| Ampicilline                    | 5 mg / ml (0.5 g / 100 ml)   | NS      | 24 h             | 24 h              | 24 h              |
|                                | 20 mg / ml (5 g / 240 ml)    | NS      | 24 h             | 24 h              | 24 h              |
| Carboplatin                    | 0.5 mg / ml (0.5 g / 100 ml) | D5W     | 28 days          | 28 days           | 28 days           |
|                                | 10 mg / ml (1 g / 100 ml)    | D5W     | 28 days          | 28 days           | 28 days           |
| Céfazoline                     | 1 mg / ml (0,250 g / 240 ml) | NS      |                  | 24 h              | 24 h              |
|                                | 2 mg / ml (0,5 g / 240 ml)   | NS      |                  | 24 h              | 24 h              |
| Céfazoline                     | 25 mg / ml (6 g / 240 ml)    | NS      | 7 days           | 24 h              | 24 h              |
| Céfépime                       | 20 mg / ml (2 g / 100 ml)    | NS      | 7 days           | 24 h              | 24 h              |
| Céfotaxime                     | 25 mg / ml (6 g / 240 ml)    | NS      |                  | 24 h              | 24 h              |
| Céfotaxime                     | 10 mg / ml (1 g / 100 ml)    | NS      |                  | 24 h              | 24 h              |
|                                | 20 mg / ml (2 g / 100 ml)    | NS      |                  | 24 h              | 24 h              |
| Ceftazidime                    | 20 mg / ml (2 g / 100 ml)    | NS      | 7 days           | 7 days            | 24 h              |
|                                | 25 mg / ml (6 g / 240 ml)    | NS      | 7 days           | 7 days            | 24 h              |
| Céftriaxone                    | 10 mg / ml (1 g / 100 ml)    | NS      | 14 days          | 24 h              | 24 h              |
|                                | 16 mg / ml (4 g / 240 ml)    | NS      | 14 days          | 24 h              | 24 h              |
| Céftriaxone                    | 20 mg / ml                   | NS      | 14 days          | 24 h              | 24 h              |
| Céfuroxime                     | 15 mg / ml                   | NS      | 7 days           |                   |                   |
| Ciprofloxacin                  | 1 mg / ml (0.1 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
|                                | 2 mg / ml (0.2 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
| Ciprofloxacin                  | 200 mg / 100 ml              | NS      | 12 days          | 12 days           |                   |
| Cisplatine                     | 1 mg / ml (0.3 g / 300 ml)   | NS      |                  | 4 days            |                   |
| Cisplatine                     | 1 mg / ml                    | NS      |                  | 25 days           |                   |
| Clyndamicin                    | 10 mg / ml                   | NS      | 7 days           |                   |                   |

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| Medication                           | Concentration<br>Doses         | Diluent | 4°C<br>(var <5%) | 25°C<br>(var <5%) | 32°C<br>(var <5%) |
|--------------------------------------|--------------------------------|---------|------------------|-------------------|-------------------|
| Colistimethat-Na                     | 0.015 mlU / mL                 | NS      | 7 days           |                   |                   |
| Cyclophosphamide                     | 8 mg / ml (0.5 g / 60 ml)      | NS      |                  | 6 days            |                   |
| Cytarabine (NS)                      | 0.5 mg / ml (0.05 g / 100 ml)  | NS      | 3 days           | 24 h              |                   |
| Cytarabine (NS)                      | 1.0 mg / ml (0.1 g / 100 ml)   | NS      | 3 days           | 24 h              |                   |
| Cytarabine (D5W)                     | 0.5 mg / ml (0.05 g / 100 ml)  | D5W     | 3 days           | 24 h              |                   |
|                                      | 1.0 mg / ml (0.1 g / 100 ml)   | D5W     | 3 days           | 24 h              |                   |
| Daptomycin                           | 9.0 mg / ml                    | NS      | 7 days           |                   |                   |
| Deferoxamine                         | 100 mg / ml (5 g / 50 ml)      | NS      | 42 days          | 24 h              | 24 h              |
| Deferoxamine + Hidrocortysone        | 0.083 mg / ml + 33.33 mg / ml  | WFI     | 35 days          |                   |                   |
| Doxorubicin                          | 0.345 mg / ml                  | NS      |                  | 5 days            |                   |
|                                      | 0.670 mg / ml                  | NS      |                  | 5 days            |                   |
| Ertapenem                            | 10 mg / ml (1 g / 100 ml)      | NS      | 7 days           | 12 h              | 12 h              |
|                                      | 20 mg / ml (2 g / 100 ml)      | NS      |                  | 1 h               | 1 h               |
| Fluconazole                          | 1 mg / ml (0.1 g / 100 ml)     | NS      |                  | 24 h              | 24 h              |
|                                      | 2 mg / ml (0.2 g / 100 ml)     | NS      |                  | 24 h              | 24 h              |
| Fluoro-uracile                       | 25 mg / ml (2.5 g / 100 ml)    | NS      | 10 days          | 5 days - 10 days  | 5 days            |
|                                      | 50 mg / ml (5 g / 100 ml)      | NS      | 10 days          | 5 days - 10 days  | 5 days            |
| Fluoro-uracile                       | 25 mg / ml (2.5 g / 100 ml)    | NS      | 30 days          | 30 days           | 30 days           |
| Fluoro-uracile                       | 25 mg / ml (2.5 g / 100 ml)    | D5W     | 30 days          | 30 days           | 30 days           |
| Fluoro-uracile + Sodium Levofolinate | 5 mg / ml (5FU) + 2 mg / ml    | NS      |                  | 5 days            |                   |
| Fluoro-uracile + Sodium Levofolinate | 42 mg / ml (5FU) + 8 mg / ml   | NS      |                  | 5 days            |                   |
| Fluoro-uracile + Sodium Levofolinate | 50 mg / ml (5FU) + 8 mg / ml   | NS      |                  | 5 days            |                   |
| Fosfomicine                          | 2 mg / ml (2 g / 100 ml)       | NS      |                  | 24 h              | 24 h              |
|                                      | 8 mg / ml (8 g / 100 ml)       | NS      |                  | 24 h              | 24 h              |
| Fosfomicine                          | 30 mg / ml                     | NS      |                  | 5 days            |                   |
| Furosemide                           | 0.2 mg / ml (20 mg / 100 ml)   | NS      |                  | 24 h              | 24 h              |
|                                      | 0.4 mg / ml (40 mg / 100 ml)   | NS      |                  | 24 h              | 24 h              |
| Gemcitabine                          | 4.5 mg / ml (0.45 g / 100 ml)  | NS      |                  | 24 h              | 24 h              |
|                                      | 9.0 mg / ml (0.9 mg / 100 ml)  | NS      |                  | 24 h              | 24 h              |
| Gentamicine                          | 5 mg / ml (0.5 g / 100 ml)     | NS      |                  | 24 h              | 24 h              |
|                                      | 8 mg / ml (2 g / 240 ml)       | NS      |                  | 24 h              | 24 h              |
| Glucose Solution                     | na                             | -       |                  | 14 days           | 14 days           |
| Ifosfamide + Mesna                   | 16.2 + 3.2 g / L               | NS      | 10 days          | 10 days           |                   |
| Imipenem + Cilastatine               | 5 mg / ml (0.5 g + 0.5 g / 100 | NS      |                  | 1 h               | 1 h               |
|                                      | 8 mg / ml (2 g + 2 g / 240 ml) | NS      |                  | 1 h               | 1 h               |
| Ketoprofen                           | 80 mg / ml (4.8 g / 60 ml)     | NS      |                  | 10 days           |                   |
| Ketorolac                            | 30 mg / ml (1.8 g / 60 ml)     | NS      |                  | 10 days           |                   |
| Maxipime                             | 20 mg / ml (2 g / 100 ml)      | NS      |                  | 96 h              |                   |
| Meropenem                            | 20 mg / ml (2 g / 100 ml)      | NS      | 7 days           | 12 h              | 1 h               |
|                                      | 25 mg / ml (6 g / 240 ml)      | NS      |                  | 12 h              | 1 h               |

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| Medication                 | Concentration<br>Doses         | Diluent | 4°C<br>(var <5%) | 25°C<br>(var <5%) | 32°C<br>(var <5%) |
|----------------------------|--------------------------------|---------|------------------|-------------------|-------------------|
| Meropenem                  | 10 mg / ml                     | NS      | 4 days           | 24 hours          | 24 hours          |
| Meropenem                  | 4 mg / ml                      | NS      | 7 days           |                   |                   |
| Methylprednisolone         | 5 mg / ml (0.5 g / 100 ml)     | NS      |                  | 24 h              | 24 h              |
|                            | 8 mg / ml (2 g / 240 ml)       | NS      |                  | 24 h              | 24 h              |
| Metoclopramide             | 0.05 mg / ml (0.5 mg / 100 ml) | NS      |                  | 48 h              | 48 h              |
|                            | 0.1 mg / ml (1 mg / 100 ml)    | NS      |                  | 48 h              | 48 h              |
| Metotrexato                | 1 g / L                        | NS      | 14 days          | 14 days           |                   |
|                            | 2 g / L                        | NS      | 14 days          | 14 days           |                   |
| Morphine                   | 20 mg / ml (1 g / 50 ml)       | NS      |                  | 30 days           |                   |
| Nafcillin                  | 20 mg / ml                     | NS      | 2 days           |                   | 24 hours          |
| Ondansetron                | 0.4 mg / ml (4 mg / 100 ml)    | NS      |                  | 24 h              | 24 h              |
|                            | 0.8 mg / ml (8 mg / 100 ml)    | NS      |                  | 24 h              | 24 h              |
| Oxacilline                 | 5 mg / ml (0.5 g / 100 ml)     | NS      |                  | 24 h              | 24 h              |
|                            | 8 mg / ml (2 g / 250 ml)       | NS      |                  | 12 h              | 12 h              |
| Oxaliplatin                | 1 mg / ml (0.1 g / 100 ml)     | NS      | 28 days          | 28 days           |                   |
|                            | 50 mg / ml (5 g / 1000 ml)     | NS      | 28 days          | 28 days           |                   |
| Paclitaxel                 | 0.565 g / L                    | NS      | 5 days           | 5 days            | 14 days           |
| Pipéracilline              | 10 mg / ml (1 g / 100 ml)      | NS      |                  | 24 h              | 24 h              |
|                            | 33 mg / ml (8 g / 240 ml)      | NS      |                  | 24 h              | 24 h              |
| Pipéracilline + Tazobactam | 45 mg / ml (4 g + 0.5 g / 100  | NS      |                  | 24 h              | 24 h              |
|                            | 80 mg / ml (16 g + 2 g / 240   | NS      |                  | 24 h              | 24 h              |
| Pipéracilline + Tazobactam | 40 mg / ml + 5 mg / ml         | NS      | 7 days           | 7 days            |                   |
| Rifampicine                | 0.5 mg / ml (0.5 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
|                            | 3.0 mg / ml (0.3 g / 100 ml)   | NS      |                  | 6 h               | 6 h               |
| Ropivacaine                | 2.0 mg / ml (1.2 g / 60 ml)    | NS      |                  | 10 days           |                   |
| Saline solution            | na                             | -       |                  | 14 days           | 14 days           |
| Teicoplanin                | 4 mg / ml                      | NS      | 24 h             |                   |                   |
| Tobramycine                | 1.0 mg / ml (0.1 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
|                            | 7.5 mg / ml (0.75 g / 100 ml)  | NS      |                  | 24 h              | 24 h              |
| Tobramycine                | 4.0 mg / ml                    | NS      | 10 days          |                   |                   |
| Trabectedin                | 0.012 mg / ml                  | NS      | 24 h             | 48 h              |                   |
| Tramadol                   | 50 mg / ml (3 g / 60 ml)       | NS      |                  | 10 days           |                   |
| Vancomycine                | 5.0 mg / ml (0.5 g / 100 ml)   | NS      |                  | 24 h              | 24 h              |
|                            | 8.0 mg / ml (2 g / 240 ml)     | NS      |                  | 24 h              | 24 h              |
| Vancomycine                | 4.0 mg / ml                    | NS      | 14 days          | 14 days           |                   |

### Source references:

1. NHS, « A Standard Protocol, for Deriving and Assessment of Stability» (5th edition, September 2019)
2. Handbook on injectable drugs, 16th edition. By L.A. Trissel 2011.

**Stability studies done with Easyflow<sup>®</sup> Elastomeric Infusion Pump of Adriamed (Standard, DFO, R, RC Versions) extendable to the Neopump<sup>®</sup> and Neopump<sup>®</sup> R, trade versions of Easyflow<sup>®</sup> Elastomeric Pumps.**