

USTR 3437

Available Extractables Reports

Version Number: Version Date: Author: 10.0 April 04, 2023 Chien-Ju Shih

List of Available Extractables Reports for Pall-Manufactured Components

Pall Corporation recognizes the need for standardized extractables data, such as those proposed by the BioPhorum Operations Group (BioPhorum) and United States Pharmacopeia (USP) <665>, which support risk assessment requirements and facilitate qualification of single-use systems.

Please find a list of our currently available extractables reports for components manufactured by Pall and integrated into Pall single-use systems (SUS) (Table 1). This includes data aligned with BioPhorum, USP <665>, as well as existing legacy compound-specific extractables reports.

The detailed extractables reports may be accessed with an account via the <u>Accelerator^s Regulatory</u> <u>Dossier</u>.

Additional extractables reports for non-Pall manufactured components integrated in Pall SUS may be found via the Accelerator Regulatory Dossier or the <u>BioPhorum Extractables Portal</u>.

For further information as to how these reports relate to your specific process, or for support with simulation and leachables studies, please contact our <u>Accelerator Validation Services</u> team in <u>Europe</u>, <u>Americas</u>, <u>China</u>, and <u>Greater Asia</u>.

Table 1

The list of currently available BioPhorum, USP <665>, and legacy compound-specific extractables reports for Pall-manufactured components

| Product Type | Product Description | Representative Part Number | Report Type | Primary MOC ¹ | Pre- Treatment ² (Radiation, Autoclave) | Report ID | Solvent List ³ |
|--------------------------|--|-------------------------------|--------------------------|--------------------------|---|-----------------------|---|
| | | | BioPhorum | ULDPE | Radiation | VAL-AS- 003176-ER | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | Allegro™ 1 L system - film | 619-31A (film) | USP <665> | ULDPE | Radiation | VAL-AS- 003176-ER | pH 3, pH 10 |
| | | | BioPhorum | HDPE | Radiation | VAL-AS- 003177-ER | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| Biocontainer & Mixers | Allegro 1 L system - HDPE ports | 619-31A (port) | USP <665> | HDPE | Radiation | VAL-AS- 003177-ER | pH 3, pH 10 |
| | Magnetic mixer impeller | 4100654 | BioPhorum & USP <665> | HDPE, PVDF, ceramic | Radiation | VAL-AS- 006929-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, NaCl, pH 10 |
| Mixers | Allegro single-use mixers | Various | Legacy | Various | Radiation | USTR2777a | Water, EtOH |
| | Large-scale drain valve (O-ring) | SC00817 (O-ring) | BioPhorum | Si | Radiation | VAL-AS- 005734-ER | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | Broadley James• single- use pH sensor | SU-800-1100-N | USP <665> | PEEK, EPDM, Si | Radiation | VAL-AS- 010802-ER | 50% EtOH, pH 3, pH 10 |
| | Broadley James• single- use bioprocessing container (BPC) gas well (sensor) | SU-100 | USP <665> | PEEK, PPSU, Si | Radiation | VAL-AS- 013144-ER | 50% EtOH |
| Bioreactor & Mixers | Large-scale drain valve (spigot) | SC00816, SC00817 | BioPhorum | PBT | Radiation | VAL-AS- 007006-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, NaCl |

¹ Materials of construction: ULDPE = Ultra-low density polyethylene; HDPE = High-density polyethylene; PC = Polycarbonate; PSU = Polysulfone;

PES = Polyethersulfone; PP = Polypropylene; PVDF = Polyvinylidene fluoride; PEEK = Polyether ether ketone; Si = Silicone elastomer; PBT = Polybutylene terephthalate,

EPDM = Ethylene propylene diene monomer; PPSU = Polyphenylsulfone.

² Extractions performed on post-Radiation irradiated or post-autoclaved test articles.

The list of currently available BioPhorum, USP <665>, and legacy compound-specific extractables reports for Pall-manufactured components

| Product Type | Product Description | Representative Part Number | Report Type | Primary MOC ¹ | Pre- Treatment ² (Radiation, Autoclave) | Report ID | Solvent List ³ |
|-----------------------|--|-------------------------------|--------------------------|--------------------------|---|-----------------------|---|
| | | | | | Autoclave | VAL-AS- 006265-ER1 | 50% EtOH, pH 1.6, water, 1% PS80, NaCl, pH 10 |
| | Kleenpak [®] sterile connector | КРСНТ02F11, КРСНТ02M11 | BioPhorum & USP <665> | PC | Radiation | VAL-AS- 006265-ER2 | 50% EtOH, pH 1.6, water, 1% PS80, NaCl, pH 10 |
| | | | | | Autoclave | VAL-AS- 004126-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | | | BioPhorum | PSU | Radiation | VAL-AS- 004126-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | <u> Vlaannak II starila</u> | | | | Autoclave | VAL-AS- 004126-ER3 | pH 3, pH 10 |
| | connector and disconnector | KPD01HB6 | USP <665> | PSU | Radiation | VAL-AS- 004126-ER4 | pH 3, pH 10 |
| | | | | _ | Autoclave | VAL-AS- 002951-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| Sterile Connectors | Kleenpak Presto sterile connector | PSC1G8 | BioPhorum | PES | Radiation | VAL-AS- 002951-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |

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The list of currently available BioPhorum, USP <665>, and legacy compound-specific extractables reports for Pall-manufactured components

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|------------------------|---|-------------------------------|--------------------------|--------------------------|---|---------------------------|--|
| | | | | | Autoclave | VAL-AS-02790- ER1 (01) | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | | | BioPhorum | PES, PP | Radiation | VAL-AS-02790- ER2 (01) | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | | | | | Autoclave | VAL-AS- 012299-ER1 | рН 10 |
| | Kleenpak capsules with Supor® EKV membrane | KA3EKVPIG | USP <665> | PES, PP | Radiation | VAL-AS- 012299-ER2 | рН 10 |
| | | | | | Autoclave | VAL-AS- 005068-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | Kleenpak Nova capsules with Supor EKV membrane | NT6EKVPIG | BioPhorum | PES, PP | Radiation | VAL-AS- 005068-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | | | _ | _ | Autoclave | VAL-AS- 006888-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |
| | Kleenpak capsules with Supor EAV membrane | KA3EAVPIG | BioPhorum & USP <665> | PES, PP, Si | Radiation | VAL-AS- 006888-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |
| | | | | | Autoclave | VAL-AS- 007314-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |
| Sterilizing Filters | Kleenpak Nova capsules with Supor EX grade ECV membrane | NP6UECVPIG | BioPhorum & USP <665> | PES, PP, Si | Radiation | VAL-AS- 007314-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |

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The list of currently available BioPhorum, USP <665>, and legacy compound-specific extractables reports for Pall-manufactured components

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|------------------------|---|-------------------------------|--------------------------|--------------------------|---|-------------------------------|---|
| | | | | | Autoclave | VAL-AS- 004780-ER1 | 50% EtOH, pH 1.6, water, pH 10 |
| | Kleenpak Nova capsules with Fluorodyne® EX grade EDF membrane | NT6UEDFPIG | BioPhorum & USP <665> | PES, PVDF, PP, Si | Radiation | VAL-AS- 004780-ER2 | 50% EtOH, pH 1.6, water, pH 10 |
| | | | _ | _ | Autoclave | VAL-AS- 007888-ER1 | 50% EtOH, pH 1.6, water, 1% PS80, NaCl, pH 10 |
| | Kleenpak Nova capsules with Fluorodyne EX grade EDT membrane | NT6UEDTPIG | BioPhorum & USP <665> | PES, PVDF, PP, Si | Radiation | VAL-AS- 007888-ER2 | 50% EtOH, pH 1.6, water, 1% PS80, NaCl, pH 10 |
| | | | | | Autoclave | VAL-AS- 002700-ER1 (01) | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | | | BioPhorum | PVDF, PP | Radiation | VAL-AS- 002700-ER2 (01) | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl |
| | Klaappak canculas with | | | | Autoclave | VAL-AS- 009149-ER1 | pH 10 |
| Sterilizing Filters | Fluorodyne II DFL membrane | KA3DFLP1G | USP <665> | PVDF, PP | Radiation | VAL-AS- 009149-ER2 | рН 10 |

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|------------------------|---|-------------------------------|--------------------------|--------------------------|---|-----------------------|--|
| | | | | | Autoclave | VAL-AS- 005884-ER1 | 50% EtOH, pH 1.6, water, 1% PS80, NaCl, pH 10 |
| | | | BioPhorum & USP <665> | PVDF, PP, Si | Radiation | VAL-AS- 005884-ER2 | 50% EtOH, pH 1.6, water, pH 10 |
| | Kleenpak Nova capsules with Fluorodyne II DFL membrane | NT6DFLP1G | BioPhorum | PVDF, PP, Si | Radiation | VAL-AS- 005884-ER3 | 1% PS80 |
| | Ultipor® N66 filter cartridges | AB1NF7P | BioPhorum | PP, nylon | Autoclave | PHA-AM- 009775-1 | 50% EtOH, water, 1% PS80, NaCl, pH 2.7, pH 11.8 |
| | | | | | Autoclave | VAL-AS- 006449-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |
| | Kleenpak Nova capsules with Supor EAV membrane | NT6UEAVPIG | BioPhorum & USP <665> | PES, PP, Si | Radiation | VAL-AS- 006449-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, NaCl, pH 10 |
| | Polypropylene filter | | _ | _ | Autoclave | VAL-AS- 009305-ER1 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, pH 10 |
| | hardware used in Pall NP5L Kleenpak Nova capsules and AB05 filter cartridges | FY00631 FY00630 FY00111 | BioPhorum & USP <665> | PP | Radiation | VAL-AS- 009305-ER2 | 50% EtOH, pH 1.6, pH 13.5, water, 1% PS80, pH 10 |
| Sterilizing Filters | Kleenpak Nova capsules with Posidyne® membrane | NT6NFZPIG | BioPhorum & USP <665> | Nylon, PP, PE, Si | Autoclave | VAL-AS- 008626-ER1 | 50% EtOH, pH 3, Water, 1% PS80, pH 10 |

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|------------------------|---|-------------------------------|--------------------------|---------------------------|---|------------------------|--|
| | | | | | | PHA-EU- 000990-1 | Water |
| | Emflon [®] II filter cartridges | AB1V0027PV | Legacy | PVDF, PP | Autoclaved | PHA-EU- 000990-4 | 50% EtOH |
| Sterilizing Filters | Kleenpak capsules with Emflon II membrane | KA3V002PV1G | Legacy | PVDF, PP, EPDM | Radiation | PHA-EU- 013161-ER | 50% EtOH, water |
| | Kleenpak Nova capsules | | | | Radiation | VAL-AS- 004360-ER | Water, 1% PS80, NaCl, pH 4, pH 9 |
| | with Pegasus™ Prime virus removal filter membrane | NP6LUPRMPIS | BioPhorum | PES, PP | Autoclave | VAL-AS- 004360-ER1 | Water, pH 4, pH 9 |
| | Kleenpak Nova capsules with Pegasus SV4 virus removal filter membrane | NT6USV4P1 | BioPhorum | PVDF, PE, PP, Si | Autoclave | VAL-AS- 008472-ER1 | pH 1.6, water, pH 9 |
| | Kleenpak Nova capsules with Pegasus Protect virus prefilter membrane | NP6PRTP1 | BioPhorum & USP <665> | Nylon, PP, PE | Autoclave | VAL-AS- 005331-ER1 | Water, 50% EtOH, 1% PS80, NaCl, pH 4, pH 9 |
| Virus Filter | Kleenpak Nova capsules with Pegasus Protect virus prefilter membrane | NP6LPRTPIG | BioPhorum & USP <665> | Nylon, PP, PE | Radiation | VAL-AS- 005331-ER2 | Water, 50% EtOH, pH 4, pH 9 |
| | | | | | Autoclave | VAL-AS- 009605-ER10 | 50% EtOH |
| | Profile [®] II filter cartridges | AB1Y0057PH4 | USP <665> | PP, PE, Si | Radiation | VAL-AS- 009605-ER11 | 50% EtOH |
| Process Filter | Duo-Fine [®] II series filter | DFNT04510USM7 | USP <665> | Fiberglass, PP, PE, Si | Autoclave | PHA-AM- 014106-ER3 | 50% EtOH |

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|--------------------|--|-------------------------------|--------------------------|---------------------------|---|-----------------------|---------------------------------|
| Fittings | Polypropylene fittings | FY02311 | BioPhorum & USP <665> | PP | Radiation | VAL-AS-011234- ER | 50% EtOH |
| | Cadence® single-use TFF | | | | N/A | USTR2906 | Water |
| | modules with Omega™ PES membrane | CSUM010T050, CSUM010T010 | Legacy | PES, PSU, PP | N/A | USTR2928 | 25% EtOH |
| | T-Series TFF cassettes with Omega membrane | OS030T06 | Legacy | PES, urethane, PP | N/A | TR451402732 | Water |
| | Cadence inline diafiltration module with Omega PES membrane | DF05030T120612 | BioPhorum | PES, PP, Si, PSU | N/A | PHA-AM- 013313-ER1 | pH 1.6, pH 13.5, water |
| TFF | Cadence inline diafiltration module with Delta regenerated cellulose membrane | DFDC030T120612 | BioPhorum | Reg. cellulose, PP, Si | N/A | PHA-AM- 013313-ER3 | pH 1.6, pH 13.5, water |
| | | DFNST1201160 | BioPhorum & USP <665> | PEEK | Autoclave | VAL-AS- 008892-ER1 | Water, 50% EtOH, pH 3, pH 10 |
| Filling Needles | Allegro single-use filling needle | DFNLR1208632 | Legacy | PEEK, PP | Radiation, Autoclave | USTR 2837a | Water, EtOH |

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³ Solvents: 50% EtOH = 50% ethanol in water, 25% EtOH = 25% ethanol in water, pH 1.6 = 0.1 M H₃PO₄, pH 13.5 = 0.5 N NaOH, 1% PS80 = 1% polysorbate 80, pH 3 = USP <665> Solution C1, pH 10 = USP <665> Solution C2,

NaCl = 5 M NaCl.



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