BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
AGS-16C3F 30 mg (Astellas) (F)(PFL) do not shake no preservative[1]	5.1 mL SWI[1] swirl gently; do NOT shake[1] allow foam to clear before proceeding[1] record time of reconstitution	6 mg/mL[1]	discard unused portion[1] (PFL)[1]	≥ 0.3 mg/mL[1] 100 mL D5W[2,3] mix by gentle inversion[1]	complete administration within 6 h RT of reconstitution[1] **(PFL)	- unopened vials may be kept at RT for up to 4h prior to use if protected from light[1]
Aldesleukin 22 million units (1.3 mg) (Novartis) (F)(PFL) no preservative[4]	1.2 mL SWI[4,5] direct diluent against side of vial during reconstitution[4] do NOT shake[4]	18 million unit/mL (1.1 mg/mL)[4,5]	48 h **F**[4]	50 mL D5W[4] 30-70 mcg/mL[4] Less than 30 mcg/mL: dilute in D5W containing human albumin 0.1%[5]	48 h **F**[4]	- do not use in-line filter[4,5] - avoid bacteriostatic water for injection or NS due to increased aggregation[4]
				SC syringe[6,7]	14 d F[7] **(PFL)	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Alemtuzumab 30 mg/mL (Genzyme/Bayer)[8] (F)(PFL) do not shake no preservative[9]	N/A	filter NOT required[9] 30 mg/mL[9]	discard unused portion[9]	SC syringe[10]	discard at the end of the day **F,** RT	- do NOT shake[11]
				100 mL **NS,** D5W[9]	8 h **F,** RT[9] **(PFL)[11]	
Amsacrine 75 mg/1.5 mL (Erfa Canada) (RT) no preservative[12]	glass syringes preferred during reconstitution; max. time in plastic syringe[12]: 15 min 13.5 mL supplied diluent (L-lactic acid)[1] transfer 1.5mL from ampoule into the diluent vial[12]	5 mg/mL[12]	24 h RT[12] (**PFL)[12]	500 mL D5W[12] (plastic or glass container)[12]	7 d **F**, 48 h RT[12-14]	- contains DMA***
Arsenic trioxide 10 mg/10 mL (Lundbeck/Teva) (RT) no preservative[15]	N/A	1 mg/mL[15] (use filter needle to withdraw from ampoule)	discard unused portion[15]	100-250 mL **NS**, D5W[15]	48 h **F,** 24 h RT[15]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Erwinia asparaginase (asparaginase *Erwinia* chrysanthemi) 10,000 units (CGF/Jazz) (F) no preservative[16]	1-2 mL NS[16] do not shake; mix gently to minimize bubbles and contact with stopper[16]	10,000-5000 units/mL	15 min RT[16]	syringe[16]	4 h RT[16]	- contact with the rubber stopper may denature the reconstituted drug, creating filaments of insoluble material; if present, use 5 micron filter during administration[16] - do not use sterile water for reconstitution as the resulting product is not isotonic[16]
PEG-asparaginase - see pegaspargase in L-Z chart (pegylated asparaginase E. *coli*)						
Atezolizumab 840 mg/14 mL 1200 mg/20 mL (Hoffman-La Roche) (F)(PFL) do not shake no preservative[17]	N/A	60 mg/mL[17]	discard unused portion[17]	250 mL **NS**[17] mix by gentle inversion[17]	24 h F, 8 h RT[17]	- do NOT shake[17]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Avelumab 200 mg/10 mL (EMD) (F)(PFL) no preservative[18]	N/A	20 mg/mL[18]	discard unused portion[19] if refrigerated, bring vial to RT prior to use[18]	250 mL **NS**, ½-NS[18] mix by gentle inversion[18]	complete administration within 24 h F, 8 h RT[18] if refrigerated, bring bag to RT prior to administration[18]	- do NOT shake[18] - use 0.2 micron in-line filter to administer[18]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
azaCITIDine 100 mg (Celgene) (RT) no preservative[20]	4 mL SWI[20] shake vigorously[20] record time of reconstitution	25 mg/mL[20]	45 min RT, 8 h **F**[20]	SC syringe[20]	45 min RT (including preparation time), 8 h **F**[20] refrigerate syringe immediately after preparation if not to be used within 45 minutes of reconstitution[21] **Refrigerated syringes**[20]: • allow up to 30 min prior to administration to reach a temperature of ~20-25°C discard syringe if time elapsed at RT is greater than 30 min	- discard if contains large particles[20] - re-suspend syringe contents before injection by vigorously rolling syringe between palms[20] -if cold diluent reconstitution is used to extend stability, minimize exposure to RT; ensure proper refrigeration of diluent, reconstituted vial, and final product
	cold diluent reconstitution: 4 mL SWI at 2-8°C[22,23]	25 mg/mL[20]	22 h **F**[22,23]		22 h **F**[22,23]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
azaCITIDine 100 mg (Dr. Reddy's) (RT) no preservative[24]	4 mL SWI[24] shake vigorously[24]	25 mg/mL[24]	45 min RT, 8 h F[24]	SC syringe[24]	45 min RT (including preparation time), 8 h F[24] refrigerate syringe immediately after preparation if not to be used within 45 minutes of reconstitution[24] **Refrigerated syringes[24]**: • allow up to 30 min prior to administration to reach a temperature of approximately 20-25°C • discard syringe if time elapsed at RT is greater than 30 min	- do not filter[24] - discard if contains large particles[24] - re-suspend syringe contents before injection by vigorously rolling syringe between palms[24]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
BCG (Tice substrain) <u>intravesical</u> 50 mg = 1 to 8 x 10^8 CFU (Merck Canada) (F)(PFL) no preservative[25]	1 mL preservative-free NS[25] allow to stand for a few minutes, then gently swirl to suspend[25] record time of reconstitution	1 to 8×10^8 CFU/vial[25]	2 h **F**[25] **(PFL)[25]	transfer from vial to 60 mL syringe, rinse vial with another 1 mL NS; add rinse to same 60 mL syringe and qs to 50 mL with NS[25] if a closed system transfer device is used: transfer from vial to 60 mL syringe and qs to 50 mL with NS; do NOT rinse vial[25]	use within 2 h **F** of reconstitution[25,26] **(PFL)[25]	- auxiliary info: biohazard[26] - do NOT filter[25] - do NOT shake[25]
BCG (Tice substrain) <u>intravesical</u> 50 mg = 1 to 8 x 10^8 CFU (Merck USA) (F)(PFL) no preservative[27]	1 mL preservative free NS[27] allow to stand for a few minutes, then gently swirl to suspend[27] record time of reconstitution	1 to 8×10^8 CFU/vial[27]	2 h **F**[27] (PFL[27]	transfer from vial to 60 mL syringe and qs to 50 mL with NS[27]	use within 2 h **F** of reconstitution[26,27] **(PFL)[27]	- auxiliary info: biohazard[26] - do NOT filter[27] - do NOT shake[27]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
BCG <u>intravesical</u> 81 mg (Sanofi Pasteur) (F)(PFL) preservative[28]	do NOT shake; roll to reconstitute[28] 3 mL supplied diluent[28] record time of reconstitution	10.5 ± 8.7×108 CFU/vial (Connaught strain)[28]	2 h **F**, RT[28]	50 mL NS[28]	2 h **F,** RT after reconstitution[28] **(PFL)[28]	- auxiliary info: biohazard[19]
Belantamab mafodotin (30 mg/1.5 mL) (GSK) (frozen)(PFL) do not shake no preservative[29]	n/a	20 mg/mL[29]	thaw up to 4 h RT, F before use[29] once thawed: **unpunctured** vial: 10 d F[29] once thawed: **punctured** vial: discard unused portion[26,29] (PFL)[29] do NOT shake[29]	250 mL* NS[29] (0.2-2 mg/mL)[29]	8 h RT[29]	- supplied as frozen liquid[29] - recommended freezer temp[29] is (-50°C to -15°C) - thawed drug cannot be refrozen[29]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Belinostat 500 mg (Spectrum) (RT) no preservative[30]	9 mL SWI[30]	50 mg/mL[30]	12 h RT[30]	250 mL NS[30]	complete administration within 36 h RT[30]	- use 0.22 micron inline filter to administer[30]
Bendamustine 25 mg 100 mg (Lundbeck/Teva) (RT,F)(PFL) no preservative[31]	25 mg vial: add 5 mL SWI[31] 100 mg vial: add 20 mL SW[31] shake well; dissolves completely in 5 minutes[31]	5 mg/mL[31]	30 minutes[31]	0.2-0.6 mg/mL **NS**, D2.5-½NS[31] 250* - 500 mL[31]	complete administration within 24 h F, 3 h RT[32]	
Bevacizumab (AVASTIN®) 100 mg/4 mL 400 mg/16 mL (Roche) (F)(PFL) do not shake no preservative[33]	N/A	25 mg/mL[33]	discard unused portion[33]	1.4-16.5 mg/mL[33] in **NS** only[33]	48 h **F**, RT[33]	- do NOT shake[33]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Bevacizumab (MVASI®) 100 mg/4 mL 400 mg/16 mL (Amgen) (F)(PFL) do not shake no preservative[34]	N/A	25 mg/mL[34]	discard unused portion[34]	1.4-16.5 mg/mL[34] in **NS** only[34]	48 h **F**, RT[34]	- do NOT shake[34]
Bevacizumab (ZIRABEV®) 100 mg/4 mL 400 mg/16 mL (Pfizer) (F)(PFL) do not shake no preservative[35]	N/A	25 mg/mL[35]	discard unused portion[35]	1.4-16.5 mg/mL[35] in **NS** only[35]	48 h **F**, RT[35]	- do NOT shake[35]
Bleomycin 15 units (NB: dose in units only) (Fresenius Kabi) (F)(PFL) no preservative[36]	6 mL* NS[36]	2.5 units/mL	48 h F[36]	50 mL* NS[36]	24 h RT[36]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Bleomycin 15 units (NB: dose in units only) (Pfizer/Hospira) (F)(PFL) no preservative[37]	6 mL* **NS,** SWI[37]	2.5 units/mL	48 h F, 24 h RT[37]	50 mL* **NS**[37]	4 h RT[26,37]	
Blinatumomab 38.5 mcg (Amgen) (F)(PFL) do not shake no preservative[38]	3 mL SWI[38] do NOT use supplied IV solution stabilizer to reconstitute vials[38] direct diluent against side of vial during reconstitution[38] gently swirl to avoid excess foaming[38]	12.5 mcg/mL[38]	24 h F, 4 h RT[38]	250 mL NS[38] add supplied IV solution stabilizer to NS bag and gently mix to avoid foaming[38] add reconstituted drug to bag **following** addition of IV solution stabilizer[38]	complete administration within 10 d F, 96 h RT[38]	- use non-DEHP bag and IV administration set[38] - use 0.2 or 0.22 micron in-line filter[38] - prime lines with blinatumomab solution; do NOT use NS
Bortezomib **SC injection** 3.5 mg (Actavis) (RT)(PFL) no preservative[39]	1.4 mL NS[39]	2.5 mg/mL[39]	2 d **F**, RT[40,41]	SC syringe[39]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: SUBCUTANEOUS use only. Fatal if given by other routes.

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Bortezomib 3.5 mg (Actavis) (RT)(PFL) no preservative[39]	3.5 mL NS[39]	1 mg/mL[39]	2 d **F**, RT[40,41]	IV syringe[39]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: INTRAVENOUS use only. Fatal if given by other routes.
Bortezomib **SC injection** 3.5 mg (Apotex) (RT)(PFL) no preservative[42]	1.4 mL NS[42]	2.5 mg/mL[42]	2d **F**, RT[26,43]	SC syringe[42]	14 d F, 48 h RT[26,43]	- auxiliary info: WARNING: SUBCUTANEOUS use only. Fatal if given by other routes.
Bortezomib 3.5 mg (Apotex) (RT)(PFL) no preservative[42]	3.5 mL NS[42]	1 mg/mL[42]	2d **F**, RT[26,43]	IV syringe[42]	14 d F, 48 h RT[26,43]	- auxiliary info: WARNING: INTRAVENOUS use only. Fatal if given by other routes.
Bortezomib **SC injection** 3.5 mg (Janssen) (RT)(PFL) no preservative[44]	1.4 mL NS[44]	2.5 mg/mL[44]	2 d F, RT[40,41]	SC syringe[44]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: SUBCUTANEOUS use only. Fatal if given by other routes.

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Bortezomib 3.5 mg (Janssen) (RT)(PFL) no preservative[44]	3.5 mL NS[44]	1 mg/mL[44]	2 d F, RT[40,41]	IV syringe[44]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: INTRAVENOUS use only. Fatal if given by other routes.
Bortezomib **SC injection** 3.5 mg (Teva) (RT)(PFL) no preservative[45]	1.4 mL NS[45]	2.5 mg/mL[45]	2 d F, RT[40,41]	SC syringe[45]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: SUBCUTANEOUS use only. Fatal if given by other routes.
Bortezomib 3.5 mg (Teva) (RT)(PFL) no preservative[45]	3.5 mL NS[45]	1 mg/mL[45]	2 d F, RT[40,41]	IV syringe[45]	14 d F, 48 h RT[40,41]	- auxiliary info: WARNING: INTRAVENOUS use only. Fatal if given by other routes.
Brentuximab vedotin 50 mg (GMD/Seattle Genetics) (F)(PFL) no preservative[46]	10.5 mL SWI[46] direct diluent against side of vial during reconstitution[46] do NOT shake[46]	5 mg/mL[46]	24 h **F**[46]	0.4-1.8 mg/mL in **NS**, D5W, Lactated Ringer's 100-250 mL[46]	24 h F[46]	- solution should be clear to slightly opalescent, colorless, and free of visible particulates[46]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Busulfan 60 mg/10 mL (PMS) (F) no preservative[47]	N/A	6 mg/mL[47]	discard unused portion[26,47]	**NS**, D5W (dilute to volume 10 times drug volume to achieve final concentration of ~0.5 mg/mL)[47]	complete administration within 12 h F, 8 h RT[47]	- contains DMA*** - always add busulfan to diluent to mix; do not add diluent to busulfan[47]
Busulfan 60 mg/10 mL (SteriMax) (F) no preservative[48]	N/A	6 mg/mL[48]	discard unused portion[19,48]	**NS**, D5W (dilute to volume 10 times drug volume to achieve final concentration of ~0.5 mg/mL)[48]	in **NS**: complete administration within 12 h F, 8 h RT[48] in D5W: complete administration within 8 h RT[48]	- contains DMA*** - always add busulfan to diluent to mix; do not add diluent to busulfan[48]
Cabazitaxel 45 mg/4.5 mL 60 mg/6 mL (Sandoz) (RT) preservative[49]	N/A	10 mg/mL[49]	10 d **F**, RT[49]	0.10-0.26 mg/mL **NS**, D5W[49] (e.g., 250 mL*)[49]	complete administration within 48 h F, 8 h RT[49]	- use non-DEHP bag and tubing[49] - use 0.22 micron in-line filter[49] - vials contain overfill[49]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Cabazitaxel 60 mg/1.5 mL (sanofi-aventis) (RT) no preservative[50]	supplied diluent: withdraw entire contents of diluent vial and inject into the concentrate vial[50] slowly direct diluent against inside of vial to limit foaming[50] mix by repeated inversions for 45 sec[50] do NOT shake[50] let sit for 5 min[50]	10 mg/mL[50]	1 h RT[50]	0.10-0.26 mg/mL **NS**, D5W[50] (e.g., 250 mL*)	complete administration within 48 h F**,** 8 h RT[50]	- use non-DEHP bag and tubing[50] - use 0.22 micron in-line filter[50] - concentrate and diluent vials contain overfill[50] - diluent contains 13% (w/w) ethanol in water[50] - discard if crystallization occurs[50]
CARBOplatin 50 mg/5 mL 150 mg/15 mL 450 mg/45 mL 600 mg/60 mL (Accord) (RT)(PFL) no preservative[51]	N/A	10 mg/mL[51]	discard unused portion[51]	0.5-10 mg/mL[51] **NS**, D5W[51]	24 h F, 8 h RT[51]	- do NOT use aluminum-containing needle, syringe, or tubing[51]

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CARBOplatin 50 mg/5 mL 150 mg/15 mL 450 mg/45 mL 600 mg/60 mL (Omega) (RT)(PFL) no preservative[52]	N/A	10 mg/mL[52]	discard unused portion[52]	0.3-10 mg/mL **NS**, D5W[52]	48 h F[52], 24 h RT[53]	- do NOT use aluminum-containing needle, syringe or tubing[52]
CARBOplatin 50 mg/5 mL 150 mg/15 mL 450 mg/45 mL 600 mg/60 mL (Pfizer/Hospira) (RT)(PFL) no preservative[54]	N/A	10 mg/mL[54]	discard unused portion[54]	0.3-10 mg/mL **NS**, D5W[54]	48 h F[54]	- do NOT use aluminum-containing needle, syringe, or tubing[54]
CARBOplatin 50 mg/5 mL 150 mg/15 mL 450 mg/45 mL (Teva/Novopharm) (RT)(PFL) no preservative[55]	N/A	10 mg/mL[55]	discard unused portion RT[55]	0.5-10 mg/mL[56] **NS**, D5W[55,57,58]	8 h RT[55]	- do NOT use aluminum-containing needle, syringe, or tubing[55]

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Carfilzomib 10 mg 30 mg 60 mg (Amgen) (F)(PFL) no preservative[59]	10 mg: 5 mL SWI[59] 30 mg: 15 mL SWI[59] 60 mg: 29 mL SWI[59] direct diluent against side of vial during reconstitution[59] swirl gently; do NOT shake[59] if foaming occurs, allow to settle until clear (about 5 minutes)[59] record time of reconstitution	2 mg/mL[59]	24 h **F**, 4 h RT[59]	50-100 mL **D5W** only[59] do NOT dilute in NS[59]	complete administration within 24 h **F**, 4 h RT after reconstitution[59]	- if a closed system transfer device is not used for compounding, a 21 gauge (or larger gauge) needle is recommended to prevent coring of the vial stopper[59-61]

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Carmustine 100 mg (Bristol Labs) (F) no preservative[62]	3 mL diluent (supplied)[62] diluent to reach RT, then dissolve drug with 3 mL diluent; add 27 mL SWI[62] record time of reconstitution	3.3 mg/mL in 10% ethanol[62]	24 h F, 8 h RT[62]	glass[62] or polyolefin container[57] 500 mL **NS** or D5W[62]	24 h F: in glass[62] or polyolefin container[57] use within 4 h of reconstitution RT[62]	- do not use if product has oily droplets[62]
Cemiplimab 250 mg/5 mL 350 mg/7 mL (sanofi) (F)(PFL) do not shake no preservative[63]	N/A	50 mg/mL[63]	discard unused portion[26,63]	1-20 mg/mL **NS**, D5W[63] 50-100* mL[64] mix by gentle inversion	complete administration within 24 h F, 8 h RT[63]	- administer using 0.2-5 micron filter[63] - solution may contain white particulates which do not affect product quality[63]
Cetuximab 100 mg/50 mL 200 mg/100 mL (Imclone/Lilly) (F) do not shake no preservative[65]	N/A	2 mg/mL[65]	12 h F, 8 h RT[65]	syringe[65] evacuated container or bag[65]	12 h F, 8 h RT[65]	- administer using 0.22 micron filter[65] - solution may contain white particulates which do not affect product quality[65]

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CISplatin 10 mg/10 mL 50 mg/50 mL 100 mg/100mL (Accord) (RT)(PFL) no preservative[66]	N/A	1 mg/mL[66]	discard unused portion[26]	Less than or equal to 60 mg: 100 mL* NS Greater than 60 mg: 250 mL* NS 2 L of D5 in one-half or one-third NS containing 37.5 g of mannitol[66]	24 h RT[66]	- do NOT use aluminum-containing needle, syringe or tubing[66] - suggested dose limits relate to the physical limitations of the bag size and added drug volume; it is not a concentration-dependent property of the drug
CISplatin 50 mg/50 mL 100 mg/100mL (Pfizer/Hospira) (RT)(PFL) no preservative[67]	N/A	1 mg/mL[67]	discard unused portion[26]	Less than or equal to 60 mg: 100 mL* NS Greater than 60 mg: 250 mL* NS 2 L of D5 in one-half or one-third NS containing 37.5 g of mannitol[67]	24 h RT[67]	- do NOT use aluminum-containing needle, syringe or tubing[67] - suggested dose limits relate to the physical limitations of the bag size and added drug volume; it is not a concentration-dependent property of the drug

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
CISplatin 10 mg/10 mL 50 mg/50 mL 100 mg/100mL (Sandoz) (RT)(PFL) no preservative[68]	N/A	1 mg/mL[68]	48 h RT[68,69]	Less than or equal to 60 mg: 100 mL NS* Greater than 60 mg: 250 mL NS* NS, 0.45% sodium chloride with or without mannitol[70] 2 L of D5 in one-half or one-third NS containing 37.5 g of mannitol[68]	24 h RT[68]	- do NOT use aluminum-containing needle, syringe or tubing[68] - suggested dose limits relate to the physical limitations of the bag size and added drug volume; it is not a concentration-dependent property of the drug
CISplatin 10 mg/10 mL 50 mg/50 mL 100 mg/100mL (Teva) (RT)(PFL) no preservative[71]	N/A	1 mg/mL[71]	discard unused portion[19]	Less than or equal to 60 mg: 100 mL* NS Greater than 60 mg: 250 mL* NS 2 L of D5 in one-half or one-third NS containing 37.5 g of mannitol[71]	24 h RT[71]	- do NOT use aluminum-containing needle, syringe or tubing[71] - suggested dose limits relate to the physical limitations of the bag size and added drug volume; it is not a concentration-dependent property of the drug

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Cladribine 10 mg/10 mL (Fresenius Kabi) (F)(PFL) no preservative[72]	N/A	1 mg/mL[72]	discard unused potion[72]	SC syringe[73]	discard end of day[13,72,74]	
				500 mL **NS only** do NOT use D5W	24 h **RT**	
				Cassette: qs to 100 mL with **bacteriostatic NS only** via SIMS DELTEC INC. MEDICATION CASSETTES®[72] filter drug and diluent through 0.22 micron filter as each solution is being introduced into the cassette	at least 7 days[72]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Cyclophosphamide 200 mg 500 mg 1000 mg 2000 mg (Baxter) (RT)(PFL) no preservative[75]	200 mg[75]: 10 mL NS 500 mg[75]: 25 mL NS 1000 mg[75]: 50 mL NS 2000 mg[75]: 100 mL NS	20 mg/mL[75]	48 h F, 24 h RT[26,75]	100-500 mL* **NS**, D5W, D5NS[75] Less than or equal to 1 g: 100 mL* Greater than 1 g: 250 mL* high dose in BMT: may need 500 mL*	36 h F, 24 h RT[76-78]	- suggested dose limits relate to the physical limitations of the bag size and added drug volume; it is not a concentration-dependent property of the drug
Cytarabine 1000 mg/10mL 2000 mg/20mL (Pfizer/Hospira) (RT)(PFL) no preservative[79]	N/A	100 mg/mL[79]	discard unused portion[26,79]	0.1-37.5 mg/mL **NS,** D5W, SWI[79] 100 mL* **NS,** D5W, SWI	10 d F, 48 h RT[79] **(PFL)	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Cytarabine **IT injection** 1000 mg/10mL 2000 mg/20mL (Pfizer/Hospira) (RT)(PFL) no preservative[79]	N/A record time of puncture	100 mg/mL[79]	use within 4 h of initial vial puncture[26]	diluents containing preservatives should **NOT** be used for intrathecal administration[79] qs to 6 mL with preservative free NS[80,81]	use within 4 h of initial vial puncture[26] **(PFL)	- auxiliary info: IT injection[26] - label to include route in full (i.e., INTRATHECAL injection) attached to both syringe and outer ziplock bag[82]
Cytarabine **SC injection** 1000 mg/10mL 2000 mg/20mL (Pfizer/Hospira) (RT)(PFL) no preservative[83]	N/A	100 mg/mL[79]	discard unused portion[26,79]	syringe	10 d F, 48 h RT[79] **(PFL)	
Cytarabine 1000 mg/10mL 2000 mg/20mL (PMS) (RT)(PFL) no preservative[84]	N/A	100 mg/mL[84]	discard unused portion[26,84]	0.1-37.5 mg/mL **NS,** D5W, SWI[84] 100 mL* **NS,** D5W, SWI	10 d F, 48 h RT[84] **(PFL)	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Cytarabine **IT injection** 1000 mg/10mL 2000 mg/20mL (PMS) (RT)(PFL) no preservative[84]	N/A record time of puncture	100 mg/mL[84]	use within 4 h of initial vial puncture[26]	diluents containing preservatives should **NOT** be used for intrathecal administration[84] qs to 6 mL with preservative free NS[80,81]	use within 4 h of initial vial puncture[26] **(PFL)	- auxiliary info: IT injection[26] - label to include route in full (i.e., INTRATHECAL injection) attached to both syringe and outer ziplock bag[82]
Cytarabine **SC injection** 1000 mg/10mL 2000 mg/20mL (PMS) (RT)(PFL) no preservative[84]	N/A	100 mg/mL[84]	discard unused portion[26,84]	syringe	10 d F, 48 h RT[84] **(PFL)	
Dacarbazine 100 mg 200 mg (Abraxis) (F)(PFL) no preservative[85]	100 mg: 9.9 mL SWI[85] 200 mg: 19.7 mL SWI[85]	10 mg/mL[85]	72 h F, 8 h RT[85]	250-1000 mL* **NS,** D5W	24 h F, 8 h RT[85] **(PFL)[57,85]	- protect container from light during storage and administration[86] - overfill unknown

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Dacarbazine 200 mg 600 mg (Hospira) (F)(PFL) no preservative[87]	200 mg: 19.7 mL SWI[87] 600 mg: 59.1 mL SWI[87]	10 mg/mL[87]	8 h RT, 48 h F[87] (PFL)[88]	0.19–3.0 mg/mL[13,87] 250-1000 mL* **NS,** D5W	24 h F[87] **(PFL)[86]	- protect container from light during storage and administration[86] - no overfill[88,89]
Dacarbazine 600 mg (Pfizer) (F)(PFL) no preservative[90]	59.1 mL SWI[90]	10 mg/mL[90]	24 h F, 8 h RT[90]	0.19-3.0 mg/mL in D5W or NS[90]	24 h F[90] **(PFL)[86]	- protect container from light during storage and administration[86]
DACTINomycin 0.5 mg (GMD Pharma for Recordati) (RT)(PFL) no preservative[91]	1.1 mL SWI (preservative-free)[91] do **NOT** use SWI with preservative (may form precipitate)[91]	0.5 mg/mL (500 mcg/mL)[91]	discard unused portion[69]	syringe[91] 10 mcg/mL or greater[91] **NS**, D5W[91,92]	use within 4 h of initial vial puncture[69]	- drug loss reported with some cellulose ester membrane in-line filters[91]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Daratumumab 100 mg/5mL 400 mg/20mL (Janssen) (F)(PFL) do not shake no preservative[93]	N/A	20 mg/mL[93]	discard unused portion[93]	500-1000 mL NS dilute to final volume by withdrawing volume from bag equal to volume of drug to be added[93] mix by gentle inversion[93]	24 h **F,** followed by 15 h infusion (total 39 h)[93] allow bag to come to room temperature, then use immediately[93] **(PFL)	- administer with a 0.22 or 0.2 micron in-line filter[93] - discard if visible particles are observed[93] - complete infusion within 15 hours[93]
DAUNOrubicin 20 mg (Erfa Canada Inc.)[94] (RT)(PFL)[95] no preservative[96]	4 mL SWI[94]	5 mg/mL[94,97]	48 h F, 24 h RT[96]	100-250 mL in isotonic solution e.g., NS[94] no data for D5W[96]	48 h F, 24 h RT[94]	
DAUNOrubicin 20 mg (Teva/Novopharm) (RT)(PFL) no preservative[98]	4 mL SWI[98]	5 mg/mL[98]	48 h F, 24 h RT[98] **(PFL)[98]	100-250 mL **NS,** D5W[57]	48 h F, 24 h RT[98] **(PFL)[98]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Degarelix 80 mg 120 mg (Ferring) (RT) do not shake[99] no preservative[100]	80 mg: 4.2 mL SWI (supplied diluent)[99]	20 mg/mL[99]	2 h RT[99]	SC syringe[99]	2 h RT[99]	
	120 mg: 3 mL SWI (supplied diluent)[99]	40 mg/mL[99]				
	swirl gently; avoid shaking to prevent foam formation[99] reconstitution may take up to 15 min[99]					

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Denosumab (XGEVA®) 120 mg/1.7 mL (Amgen) (F)(PFL) do not shake no preservative[101]	N/A	71 mg/mL[101]	discard unused portion[69,101]	SC syringe[101]	use within 4 h of initial puncture[69]	- not interchangeable with PROLIA[101] - do not use if solution is cloudy; trace amounts of translucent to white proteinaceous particles are acceptable[101] - avoid vigorous shaking[101] - bring to room temperature 15-30 minutes prior to administration[101]
Dexrazoxane 250 mg 500 mg (Pfizer) (RT) no preservative[102]	250 mg: 25 mL SWI[102] 500 mg: 50 mL SWI[102]	10 mg/mL[102]	3 h F, 30 min RT[103]	MUST BE FURTHER DILUTED With Lactated Ringers Injection to 1.3 – 3.0 mg/mL[102]	4 h F, 1 h RT[102]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Dinutuximab 17.5 mg/5 mL (Unither/United Therapies) (F)(PFL) do not shake no preservative[104]	N/A	3.5 mg/mL[104]	discard unused portion[26]	100 mL NS[104] mix by gentle inversion[104]	initiate infusion within 4 h of dilution; refrigerate bag if not hung immediately[104] complete administration within 24 h of dilution[104]	- do NOT shake[104]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
DOCEtaxel 20 mg/2 mL 80 mg/8 mL 160 mg/16 mL (Pfizer/Hospira) (**F**, RT)(PFL) preservative[105]	N/A	10 mg/mL[105]	20mg/2 mL vial: discard unused portion[19,105] 80 mg/8 mL or 160 mg/16 mL vial[105] (maximum number of punctures: up to 3 doses can be removed when a venting needle is also inserted, i.e., 6 punctures total)[107] 14 d F[19,105] **(PFL)[105]	0.3-0.74 mg/mL[105] 250 mL* **NS,** D5W[105]	complete administration within 14 d F, 48 h RT[19,106,107]	- use non-DEHP bag and IV administration set[105]
DOCEtaxel 20 mg/2 mL 80 mg/8 mL 160 mg/16 mL (Sandoz) (F,RT)(PFL) preservative[108]	N/A	10 mg/mL[108]	14 d **F**, RT[19,109]	0.3-0.74 mg/mL[108] 250 mL* **NS**, D5W[108]	complete administration within 24 h F, 4 h RT[108,110]	- use non-DEHP bag and IV administration set[108]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
DOCEtaxel 20 mg/0.5 mL 80 mg/2 mL (sanofi-aventis) (**F**, RT)(PFL) no preservative[111]	supplied diluent : - if vials were refrigerated, allow to warm for 5 min at RT. Withdraw entire contents of the diluent and inject the entire contents of the syringe into the corresponding concentrate vial. Mix by repeated inversions for 45 sec[111] do NOT shake[111] Let sit for 5 minutes[111]	10 mg/mL[111]	14 d **F,** RT[19,111,112]	0.3-0.74 mg/mL[111] 250 mL **NS,** D5W[111]	complete administration within 4 h **F**,[111] 48 h RT[19,112]	- use non-DEHP bag and IV administration set[111]
DOXOrubicin 10 mg/5 mL 20 mg/10 mL 50 mg/25 mL 200 mg/100 mL (Accord) (F)(PFL) no preservative[113]	N/A	2 mg/mL[113]	8 h[113]	syringe[113]	24 h **F**, RT from initial vial puncture[113]	- for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
DOXOrubicin 10 mg 50 mg 150 mg (Hospira) (RT)(PFL) no preservative[114]	10 mg: 5 mL NS, SWI, D5W[114] 50 mg: 25 mL NS, SWI, D5W[114] 150 mg: 75 mL NS, SWI, D5W[114] (NS reconstitution takes longer)[114]	2 mg/mL[114]	48 h F, 24 h RT[13,114]	syringe[114]	48 h F, 24 h RT[13,115]	- for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)
DOXOrubicin 10 mg/5 mL 20 mg/10 mL 50 mg/25 mL 200 mg/100 mL (Teva/Novopharm) (F)(PFL) no preservative[116]	N/A record time of puncture	2 mg/mL[116]	8 h[116]	syringe[116]	48 h F, 24 h RT[116] from initial vial puncture	- for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
DOXOrubicin 10 mg/5 mL 50 mg/25 mL 200 mg/100 mL (Pfizer) (F) no preservative[117]	N/A	2 mg/mL[117]	discard unused portion[69,117]	syringe[117]	48 h F, 24 h RT[117]	- for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)
DOXOrubicin Pegylated Liposomal 20 mg/10 mL (Janssen) (F) no preservative[118]	N/A	2 mg/mL[118]	discard unused portion[118]	Less than 90 mg: 250 mL **D5W** only[118] Greater than or equal to 90 mg: 500mL **D5W** only[118]	24 h F[118]	- do not filter[118]
DOXOrubicin Pegylated Liposomal 20 mg/10 mL 50 mg/25 mL (Taro) (F) no preservative[119]	N/A	2 mg/mL[119]	discard unused portion[119]	Less than 90 mg: 250 mL **D5W** only[119] Greater than or equal to 90 mg: 500mL **D5W** only[119]	24 h F[119]	- do not filter[119]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Durvalumab 120 mg/2.4 mL 500 mg/10 mL (AstraZeneca) (F)(PFL) do not shake no preservative[120]	N/A	50 mg/mL[120]	discard unused portion[120]	1-15 mg/mL NS, D5W[120] (e.g., 100 mL* **NS**, D5W) mix by gentle inversion[120]	24 h F, 12 h RT[120]	- do NOT shake[120] - use 0.2-0.22 micron in-line filter to administer[120]
Epirubicin 10 mg/5 mL 20 mg/10 mL 50 mg/25 mL 150 mg/75 mL 200 mg/100 mL (Teva/Novopharm) (F)(PFL) no preservative[121]	N/A	2 mg/mL[121]	8 h **F**, RT[121]	syringe[121]	48 h **F**, 24 h RT from initial vial puncture[121]	
Epirubicin 10 mg/5 mL 50 mg/25 mL 200 mg/100 mL (Fresenius Kabi) (F)(PFL) no preservative[122]	N/A record time of puncture	2 mg/mL[122]	8 h[122]	syringe[122]	48 h **F**, 24 h RT from initial vial puncture[122]	
				100 mL*** NS,** D5W	2 d **F**, RT[19,122]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Epirubicin 10 mg/5 mL 50 mg/25 mL 200 mg/100 mL (Pfizer) (F)(PFL) no preservative[123]	N/A record time of puncture	2 mg/mL[123]	8 h[123]	syringe[123]	48 h **F**, 24 h RT from initial vial puncture[123]	
				100 mL* **NS,** D5W[57]	2 d **F**, RT[124]	
EPOCHR (ULYEPOCHR protocol) (RT) no preservative[19,125-128]	see brand specific entries for: DOXOrubicin as applicable	see brand specific entries for: DOXOrubicin, etoposide, vinCRIStine	see brand specific entries for: DOXOrubicin, etoposide, vinCRIStine	etoposide dose ≤125 mg/24 h: in 500 mL NS etoposide dose >125 mg/24 h: in 1000 mL NS	etoposide concentration ≤0.25 mg/mL: complete administration within 72 h RT precipitation occurs at etoposide concentrations >0.25 mg/mL	- final product is a 3-in-1 solution containing etoposide, DOXOrubicin, vinCRIStine (refer to ULYEPOCHR protocol) - use non-DEHP bag and tubing only - use 0.22 micron inline filter
eriBULin 1 mg/2 mL (Eisai Limited) (RT)(PFL)[129] no preservative[19]	N/A	0.5 mg/mL[129]	discard unused portion[19,129]	IV syringe[129]	24 h **F**, 6 h RT[129]	- do not administer through dextrose containing lines[129] - vials contain dehydrated alcohol USP (5% v/v)[129]

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Etoposide 100 mg/5 mL 200 mg/10 mL 500 mg/25 mL 1000 mg/50 mL (Sandoz) (RT)(PFL) preservative[130]	N/A	20 mg/mL[130]	14 d RT[130]	0.2-0.4 mg/mL **NS**, D5W[130] 500 mL* **NS,** D5W	**0.2 mg/mL:** 7 d **F**, RT[130] **0.4 mg/mL:** 12 h **F**, RT[130]	- use non-DEHP bag and tubing only - use 0.22 micron in-line filter[131] - for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Etoposide 100 mg/5 mL 200 mg/10 mL 500 mg/25 mL 1000 mg/50 mL (Teva/Novopharm) (RT)(PFL) no preservative[132]	N/A	20 mg/mL[132]	discard unused portion[132]	**NS** Stability is concentration dependent	**0.2-0.3 mg/mL:** 7 d **F,**[133] 2 d RT[133,134] **0.4-0.5 mg/mL**: 1 d **F,**[133] 1d RT[133] **0.6-9.0mg/mL**: generally unstable **9.5 mg/mL:** 2 d **F,**[133] 1d RT[133] **10-12 mg/mL:** 7 d **F,**[133] 2 d RT[133,134]	- use non-DEHP bag and tubing only - use 0.22 micron in-line filter[131] - for ULYEPOCHR protocol, see entry for EPOCHR (3-in-1solution containing etoposide, DOXOrubicin, vinCRIStine)
				D5W[132]	4 h RT[132,135]	
Etoposide phosphate (ETOPOPHOS®) 100 mg (Xediton/Cheplapharm) (F)(PFL) no preservative[136-138]	5 mL NS, D5W, SWI, BWI[136,139]	20 mg/mL[136,139]	48 h F[19,136,139], 24 h RT[136,139],	500 mL* **NS**, D5W[136,139] (do not dilute to less than 0.1 mg/mL)[136,139]	24 h **F**, RT[136,139]	
	10 mL NS, D5W, SWI, BWI[136,139]	10 mg/mL[136,139]				

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Filgrastim (NEUPOGEN®) 300 mcg/1 mL 480 mcg/1.6 mL (Amgen) (F)(PFL) do not shake no preservative[140]	N/A	300 mcg/mL[140]	discard unused portion[19]	SC syringe[140]	14 d F[19,141]	- albumin is added to D5W to prevent filgrastim adsorption to plastic[140] - incompatible with saline[140,142] - do NOT dilute to less than 5 mcg/mL[140]
				50-100 mL **D5W** only[142] in PVC, polyolefin, or glass[140] (for filgrastim concentrations of 5-15 mcg/mL in D5W, add albumin 2 mg/mL)[140]	7 d F, 48 h RT[19,141]	
Fludarabine 50 mg (Berlex) (F) no preservative[143]	2 mL SWI[143]	25 mg/mL[143]	48 h **F,** RT[13,124]	dilute to maximum of 1 mg/mL[143,144] 50-100 mL **NS,** D5W[143]	48 h **F**, RT[13,124]	
Fludarabine 50 mg (Teva/Novopharm) (F) no preservative[145]	N/A	25 mg/mL[145]	discard unused portion[145]	dilute to maximum of 1 mg/mL[145] (e.g., 50-100 mL* **NS,** D5W)	48 h **F**, 24 h RT[145]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Fluorouracil 5000 mg/100 mL (Accord) (RT)(PFL) no preservative[146]	N/A	50 mg/mL[146]	48 h RT[19,147]	syringe[146]	48 h RT[19,147]	
				0.5-10 mg/mL[147] (e.g., 50-1000 mL* D5W)	48 h RT[19,147]	
				CIVI: ambulatory pump[148]	complete within 8 d[147]	
Fluorouracil 5000 mg/100 mL (Pfizer/Hospira) (RT)(PFL) no preservative[149]	N/A	50 mg/mL[149]	8 h RT[149]	syringe[149]	8 h RT[26,149]	
				0.5-10 mg/mL[150] (e.g., 50-1000 mL* D5W)	24 h RT[149]	
				CIVI: ambulatory pump[148]	complete within 8 d[13,57,151,152]	

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DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Fluorouracil 500 mg/10 mL 5000 mg/100 mL (Sandoz) (RT)(PFL) no preservative[153]	N/A	50 mg/mL[153]	48 h RT[26,154]	syringe	48 h RT[26,153]	
				0.35-15 mg/mL[154] (300-500 mL D5W)[153]	48 h RT[26,154]	
				CIVI: ambulatory pump[148]	complete within 8 d[13,57,151,152]	
Gemcitabine 200 mg 1000 mg 2000 mg (Accord) (RT) no preservative[155]	200 mg: 5 mL NS[155] 1000 mg: 25 mL NS[155] 2000 mg: 50 mL NS[155]	38 mg/mL[155]	24 h RT[155]	syringe[155]	24 h RT[155]	
				0.1-38 mg/mL NS[155]	48 h RT[19,156,157]	
Gemcitabine 200 mg/5.3 mL 1000 mg/26.3 mL 2000 mg/52.6 mL (Pfizer/Hospira) (F) no preservative[158]	N/A	38 mg/mL[159]	discard unused portion[158]	syringe[159]	24 h RT[158]	
				0.1–38 mg/mL **NS**, D5W[158]		

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Gemcitabine (NOTE: concentration) 200 mg/5 mL 1000 mg/25 mL 2000 mg/50 mL (Sandoz) (F) no preservative[160]	N/A	**40 mg/mL**[160]	discard unused portion[160]	syringe[160] 0.1–40 mg/mL **NS**, D5W[160]	24 h RT[160]	**CAUTION: alternative concentration**
Gemtuzumab ozogamicin 4.5 mg (Pfizer) (F)(PFL) no preservative[161]	5 mL SWI[161] allow vial to come to room temperature prior to use (~5 min)[161] swirl gently to mix; do NOT shake[161]	1 mg/mL[161]	6 h F, 3 h RT[161] protect from light if not used immediately[161]	0.075 – 0.234 mg/mL **NS**[161] (50 mL* NS) mix by gentle inversion; do NOT shake[161]	complete administration within 12 h F, 6 h RT[161] (PFL)** if refrigerated, bring bag to RT over 1 h prior to administration[161]	- use 0.2 micron inline filter to administer[161] - protect infusion **bag** from light (including UV) during administration[161] - protect administration **line** from light ONLY if hang time will be longer than 2 h[161,162] - solution may contain white particulates which do not affect product quality[161]

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
IDArubicin 5 mg 10mg (Pfizer) (RT)(PFL) no preservative[163]	5 mg: 5 mL SWI[163] 10 mg: 10 mL SWI[163] vial contents under negative pressure[163] do NOT use BWI to reconstitute[163]	1 mg/mL[163]	48 h **F**, 24 h RT[163] **(PFL)[163]	syringe[163]	48 h **F**, 24 h RT[163]	- avoid alkaline solutions[163]
IDArubicin PFS 5 mg/5 mL 10 mg/10 mL 20 mg/20 mL (Pfizer) (F)(PFL) no preservative[163]	N/A	1 mg/mL[163]	48 h **F,** 24 h RT, **(PFL)[163]	syringe[163]	4 h from initial puncture[19]	- avoid alkaline solutions[163]
IDArubicin 5 mg/5 mL 10 mg/10 mL 20 mg/20 mL (Fresenius Kabi**)** (F)(PFL) no preservative[164]	N/A	1 mg/mL[164]	discard unused solution[164]	syringe[164]	4 h from initial puncture[19]	- avoid alkaline solutions[164]

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Ifosfamide 1000 mg 3000 mg (Baxter) (RT) no preservative[165]	1000 mg: 20 mL SWI[165] 3000 mg: 60 mL SWI[165] shake well	50 mg/mL[165]	48 h F, 24 h RT[19,165]	0.6–20 mg/mL[165] 500–1000 mL* **NS**, D5W, Lactated Ringer's[165]	72 h F, 24 h RT[165] 24 h **F,** RT when mixed with mesna[57]	
Ifosfamide 1000 mg 3000 mg (Fresenius Kabi) (RT) no preservative[166]	1000 mg: 20 mL SWI[166] 3000 mg: 60 mL SWI[166] shake well	50 mg/mL[166]	48 h F, 24 h RT[19,166]	0.6-20 mg/mL[166] 500-1000 mL*** NS** D5W, Lactated Ringer's[166]	72 h F, 24 h RT[166] 24 h **F,** RT when mixed with mesna[57]	
Iniparib 100 mg/10 mL (sanofi-aventis) (F) no preservative[167]	N/A	10 mg/mL[167]	discard unused portion[167]	250 mL **NS**, D5W dilute to 250 mL final volume by withdrawing volume from bag equal to volume of drug to be added*[167]	24 h RT[167]	- *may also use empty IV bag and qs to final volume of 250 mL with **NS**, D5W[167]

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Inotuzumab ozogamicin 0.9 mg (Pfizer) (F)(PFL) no preservative[168]	4 mL **SWI**[168] gently swirl vial to mix[168]	0.25 mg/mL[168] record time of reconstitution	4 h **F**[168] dilute dose within 4 hours of reconstitution[168] protect from light if not used immediately[169]	0.01- 0.1 mg/mL NS[168] (50 mL* NS)[168] mix by gentle inversion[168]	complete administration within 8 h of reconstitution **F,** RT[168] (PFL)[168] if refrigerated, bring bag to RT over 1 h prior to administration[168]	- do NOT shake[168] - protect container from UV and fluorescent light during storage and administration[168,169] - protect administration line from light ONLY if hang time will be longer than 1 h[168,169]
Interferon Alfa -2b 10 million units/1 mL (Merck) (F) preservative[170,171]	N/A	10 million units/mL[170]	7 d F[170]	syringe[170]	7 d F[19]	- vials can be kept at RT for up to 7 days before use; discard if not used within this time[170]
				final concentration ≥ 0.3 million IU/mL[170] 50 mL NS[170]	24 h **F**, RT[170]	
Interferon Alfa -2b 18 million units/3 mL (Merck) (F) preservative[170,171]	N/A	6 million units/mL[170]	14 d F[19,170]	syringe[170]	14 d F[19,171]	- vials can be kept at RT for up to 7 days before use; discard if not used within this time[170]
				final concentration ≥ 0.3 million IU/mL[170] 50 mL NS[170]	24 h **F**, RT[170]	

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Interferon Alfa -2b 25 million units/2.5 mL (Merck) (F) preservative[170,171]	N/A	10 million units/mL[170]	14 d F[19,170]	syringe[170]	14 d F[19,171]	- vials can be kept at RT for up to 7 days before use; discard if not used within this time[170]
				final concentration ≥ 0.3 million IU/mL[170] 50 mL NS[170]	24 h **F**, RT[170]	
Interferon Alfa -2b 10 million units (Merck) (F) no preservative (unless reconstituted with BWI)[170]	1 mL supplied diluent (SWI)[170] do NOT shake; roll to reconstitute[170]	10 million units/mL[170]	24 h F[170]	syringe[170]	24 h F[19,171]	- after reconstitution, provides an isotonic solution which may be used for intralesional injection[170] - non-reconstituted vials can be kept at RT for up to 4 weeks before use; discard if not reconstituted for use within this time[170]
				final concentration ≥ 0.1 million IU/mL[170] 100 mL NS[170]	24 h **F**, RT[171]	
	1 mL BWI[170] do NOT shake; roll to reconstitute[170]		14 d F[19,170]	syringe[170]	14 d F[19,170]	
				final concentration ≥ 0.1 million IU/mL[170] 100 mL NS[170]	24 h **F**, RT[171]	

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Ipilimumab 50 mg/10 mL 200 mg/40 mL (BMS Canada) (F)(PFL) no preservative[172]	N/A	5 mg/mL[172]	24 h **F**,RT[172]	1- 4 mg/mL **NS**, D5W[172] OR undiluted in empty viaflex bag or glass bottle (allow vials to stand at RT for ~5 min prior to withdrawal of contents)[172]	24 h **F**,RT[172]	- do NOT shake[172] - administer with 0.2 or 0.22 in-line filter[172] - vials may contain translucent-to-white amorphous particles[172] - discard if cloudy or has pronounced colour change (should be clear to pale yellow)[172]
Irinotecan 40 mg/2 mL 100 mg/5 mL 500 mg/25 mL (Accord) (RT)(PFL) no preservative[173]	N/A	20 mg/mL[173]	discard unused portion[173]	0.12–3 mg/mL **D5W** (preferred), NS [173] 500* mL[57]	48 h F, 24 h RT **(PFL)[173]	
Irinotecan 40 mg/2 mL 100 mg/5 mL 300 mg/15 mL 500 mg/25 mL (Pfizer/Hospira) (RT)(PFL) no preservative[174,175]	N/A	20 mg/mL[174,175]	discard unused portion[174,175]	0.12-3 mg/mL D5W (preferred), NS[174,175] 500* mL[57]	14 d F, 48 h RT[26,174,175] **(PFL)[174,175]	

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BC CANCER CHEMOTHERAPY PREPARATION AND STABILITY CHART						
DRUG & STRENGTH (Storage Prior to Use, Manufacturer, Preservative Status)	**Reconstitute With:**	**To Give:**	**Vial Stability**	**Product**	**Product Stability**	**Special Precautions/Notes**
Irinotecan Liposome 43 mg/10 mL (Servier) (F)(PFL) no preservative[176]	N/A	4.3 mg/mL[176]	discard unused portion[176]	to a final volume of 500 mL with **NS**, D5W[176] mix by gentle inversion[176]	24 h F, 4 h RT[176] **(PFL) (allow product to come to RT prior to administration if stored in F)[176]	- do not use in-line filter[176] - **expressed as irinotecan free base**
Ixabepilone 15 mg (contains 16 mg) 45 mg (contains 47 mg) (BMS) (F)(PFL) no preservative[177]	15 mg: 8 mL supplied diluent[177] 45 mg: 23.5 mL supplied diluent[177]	2 mg/mL[177]	1 h RT[177]	0.2-0.6 mg/mL in Lactated Ringer's Injection USP (use non-DEHP infusion container)[177]	6 h RT[177]	- use 0.2-1.2 micron in-line filter[177] - use non-DEHP bag and administration set[177]

* Suggested volume based on usual dose range and any concentration range of stability data
** Protect from light means minimizing exposure to direct sunlight over a *storage* period. More specific information on protection from light (eg, protecting container and tubing during *administration*) will be indicated in the Special Precautions/Notes column.
*** Contains DMA (N,N dimethylacetamide). Product may be incompatible with closed system transfer devices such as ChemoLock.

Centres are not to change content locally. All suggestions for change are to be forwarded to the Cancer Drug Manual editor.

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Explanatory Notes:

Stability data assumes products prepared using standard aseptic technique in biological safety cabinet at low risk for contamination according to the classification outlined in USP 797.[178,179]
Vial stability: Stability of solution after first puncture or reconstituted solution.
Storage temperature: If information states same stability with refrigerator and room temperature storage, then fridge stability is bolded as preferred (ie, to minimize growth of micro-organisms).
Discard unused portion: Unused portion from single use vials should be discarded at the end of the day.
"overfill known" is stated if the manufacturer states overfill that is present is within acceptable limits.
"Complete administration within __" is stated if the manufacturer specifies that the infusion must be completed in a specific time frame following preparation, usually including entire time required for preparation (from first puncture), storage, and administration of infusion.

Abbreviations:

BWI = bacteriostatic water for injection
CIVI: ambulatory pump = Continuous Intravenous Infusion (e.g., elastomeric infusor)
D5W = dextrose 5% in water
DMA = N,N dimethylacetamide
F = refrigerate
Non-DEHP = not containing Di(2-ethylhexyl) phthalate (DEHP)
NS = normal saline
PFL = protect from light
RT = room temperature
SWI = sterile water for injection

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