

CHEMOTHERAPY DILUENT AND RATE GUIDE

Agent	Diluent (Preferred is bolded)	Inpatient Diluent Volume	Outpatient Diluent Volume (if different)	Administration Rate	Comments
Alemtuzumab	NS or D ₅ W	100 mL		IV over 2 hours Subcutaneous	Refrigerate; 8 hour stability; Protect from light; Premedicate
Arsenic trioxide	NS or D ₅ W	100 – 250 mL		1–2 hours	Stable 24 hour at room temp
Asparaginase	NS for IM use; NS or D ₅ W for IV	IM: ≤ 2 mL IV: 50 – 150 mL	Undiluted drug	IV: ≥ 30 min	Refrigerate; Stable 8 hours; Skin test prior to 1 st dose or if greater than 1 week between doses; Fibrinogen needs to be checked
Azacitidine	SW	25 mg/mL		Subcutaneous	Stable 1 hour at room temp; Stable 8 hours refrigerated
Bevacizumab	NS	100 mL		See comments	Initial infusion: 90 min; if first infusion is well tolerated second infusion can be over 60 min; if second infusion is well tolerated, the subsequent infusions can be over 30 min
Bleomycin	NS or D ₅ W	50 mL NS		IV over 15 min	NS has a longer stability; test dose of 1–2 Units IM, SQ, IV– wait 1 hour for reaction; monitor lifetime doses
Bortezomib	NS	1 mg/mL		IVP over 1–3 min	
Busulfan	NS or D ₅ W	≥ 0.5 mg/mL		2 hours	Stable 8 hour at room temp; Central line only
Carboplatin	D₅W or NS	0.5 – 15 mg/mL 250 – 500 mL		30–60 min	Use non–aluminum needles; NS converts carboplatin to cisplatin
Carmustine	NS or D ₅ W	150 – 500 mL (max conc 1.25 mg/mL)		2–3 hours	Glass bottle only; Use non– PVC tubing; Protect from light; Stable 8 hours at room air; Irritant; Monitor lifetime doses for pulmonary toxicity
Cetuximab	N/A	Undiluted drug		Loading: 2 hours; maintenance: 1 hour	
Cisplatin	NS	0.05 – 1 mg/mL 250 – 500 mL		1–2 hours	Hydration; Do not refrigerate;
Cladribine	NS	500 – 1000 mL		2 hours, CIVI	Usually given as 7 day CIVI
Clofarabine	NS or D ₅ W	100 – 200 mL (Less than 75 mg dose in 100mL; 75 – 125 mg in 150 mL; greater than 125 mg in 200 mL)		2 hours	Prophylactic steroids on days 1 – 3 may be beneficial in preventing systemic inflammatory response syndrome or capillary leak; no other medications should be used in the same IV line as Clofarabine.
Cyclophosphamide	NS or D ₅ W	250 mL (made 25 mg/mL)		1 hour, may vary up to 24 hours	May be combined with mesna
Cytarabine	NS or D ₅ W	500 mL		2 hour – 24 hour CIVI, IT	See IT chemo; May be given SQ; For HiDAC: give dexamethasone eye drops and have patient sign signature sheet; Use preservative free NS for IT

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Dacarbazine	NS or D ₅ W	250 – 500 mL		30–60 min	Vesicant; Protect from light; Decomposed drug turns pink
Dactinomycin	D₅W or NS	50 mL	Undiluted drug	IVPB over 15 min	Vesicant; Protect from light
Daunorubicin	NS or D ₅ W	50 mL	Undiluted drug	IVP, IVPB over 30 min, CIVI	Vesicant; Monitor lifetime doses
Daunorubicin liposomal	D ₅ W	1 mg/mL		1 hour	Vesicant; Protect from light
Decitabine	NS or D ₅ W	50 mL		1 – 3 hours	Stable for 7 hours using cold fluids.
Denileukin Defitox	NS	Greater than or equal to 15 micrograms/mL		15 min	
Docetaxel	NS or D ₅ W	0.3 – 0.9 mg/mL; 100 – 250 mL		1 hour	Give oral dexamethasone as a premedication beginning the day before docetaxel
Doxorubicin	NS or D ₅ W	50 – 100 mL	Undiluted drug	IVP, IVPB over 30 min, CIVI	Vesicant; Mix with vincristine in VAD regimen; Monitor lifetime doses
Doxorubicin liposomal	D ₅ W	250 mL		See comment	Infuse at an initial rate of 1 mg/min and if no infusion related reaction can infuse subsequent doses over 60 min; vesicant; protect from light; Monitor lifetime doses
Epirubicin	N/A	Undiluted drug		IVP	Vesicant; Protect from light; Monitor lifetime doses
Etoposide	NS or D ₅ W	0.2 – 0.4 mg/mL or 20 mg/mL undiluted drug		1 hour, CIVI	Irritant; Stability depends on concentration
Fludarabine	NS or D ₅ W	100 mL	Undiluted drug	30 min	
Fluorouracil	NS or D ₅ W	1000 mL	Undiluted drug	IVP; CIVI	Irritant; Protect from light
Gemcitabine	NS	100 mL	150 mL	30 min or FDR	
Gemtuzumab ozogamicin	NS	100 mL		2 hours	Protect from light; Premedicate with acetaminophen and diphenhydramine
Idarubicin	NS or D ₅ W	50 mL	Undiluted drug	IVP, IVPB over 15–30 min	Vesicant; Monitor lifetime doses
Ifosfamide	NS or D ₅ W	250 – 1000 mL		IVPB over 1 hour; CIVI	Give with mesna
Irinotecan	D₅W or NS	500 mL		90 min	Protect from light
Mechlorethamine	NS or D ₅ W	1 mg/mL	Undiluted drug	IVP over 1–3 min	Vesicant; Give within 60 min due to immediate decomposition
Melphalan	NS	2 mg/mL		15 min	Only stable 60 min
Methotrexate	NS or D ₅ W for high dose	250 – 1000 mL	Undiluted drug	IT, IVP, IVPB, CIVI	Use preservative free NS for IT; High doses need leucovorin rescue
Mitomycin	NS or D ₅ W	0.2 – 0.5 mg/mL	Undiluted drug	IVP over 5–15 min	Vesicant
Mitoxantrone	NS or D ₅ W	50 mL	Undiluted drug	30 min	Irritant; Monitor lifetimes doses
Nelarabine	NA	5 mg/mL	Undiluted drug	2 hours for adults; 1 hours for pediatrics	Do not dilute; stable for 8 hours.
Oxaliplatin	D ₅ W	250 – 1000 mL		2–6 hours	

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Paclitaxel	NS or D ₅ W	250 – 1000 mL; 0.3 – 1.2 mg/mL		1–24 hours	Premedicate with dexamethasone and a H ₁ and H ₂ blocker
Paclitaxel (nanoparticle albumin-bound)	NS	Final concentration should be 5 mg/mL		30 minutes or less	No premedication to prevent hypersensitivity reactions required; Stable 8 hours at room temp with ambient lighting
Panitumumab	NS	100 mL 150 mL for doses > 1000 mg		100 mL over 60 min; 150 mL over 90 min	No premedications needed
PEG-asparaginase	NS or D ₅ W	100 mL	Undiluted drug	1 hour	Intramuscular route preferred; Stable 4 hours
Pemetrexed	Preservative free NS	100 mL		10 minutes	Folic acid and vitamin B12 supplements are needed to reduce hematologic and gastrointestinal toxicity; Oral dexamethasone 4 mg twice daily the day before, the day of, and the day after pemetrexed administration to reduce the incidence and severity of possible cutaneous reactions
Pentostatin	NS or D ₅ W	50 mL		30 min	
Rituximab	NS or D ₅ W	1 – 4 mg/mL		See comments	See rituximab monograph – various rates used.
Streptozocin	NS or D ₅ W	2 mg/mL		IVP, IVPB over 30 min–6 hours	Vesicant
Thiotepa	NS	1 – 3 mg/mL		IT, IVP, IVPB, CIVI	Protect from light; Stable 24 hours; Use preservative free NS for IT
Teniposide	NS or D ₅ W	0.1 – 0.7 mg/mL		30–60 min	
Topotecan	NS or D ₅ W	50 – 100 mL	Undiluted drug	30 min	Protect from light
Trastuzumab	NS	250 mL		Load: 90 min; maintenance: 30 min	Give premedications
Vinblastine	NS or D ₅ W	IVPB: 100 mL; CIVI: 1000 mL	Undiluted drug	IVP, IVPB over 30 min, CIVI	Vesicant; Fatal if given IT
Vincristine	NS or D ₅ W	IVPB: 100 mL; CIVI: 1000 mL	25 mL; Undiluted drug	IVP, IVPB over 30 min, CIVI	Vesicant; Fatal if given IT ; Mix with doxorubicin in VAD
Vinorelbine	NS or D ₅ W	50 mL	NS, 2 mg/mL	IVP, IVPB over 30 min	Vesicant; Fatal if given IT ; NS 250 mL post-hydration

IT = intrathecal; CIVI = continuous intravenous infusion; IVP = intravenous push; IVPB = intravenous piggy back; NS = normal saline; SW = sterile water; D₅W = 5% dextrose water; N/A = not applicable

Created by Michelle Rockey, Pharm.D. 03/05; updated 10/06.