



**SUBJECT: Hazardous Drug (Chemotherapy & Hormone) testing for
KIMTECH* Cleanroom Gloves**

Dear Valued Customer,

Thank you for your inquiry about our KIMTECH* Cleanroom Gloves for protection against chemical splash hazards by chemotherapy and other hazardous drugs. Cleanroom gloves are industrial personal protective equipment (PPE) meant for use in production such as Pharmaceutical or Pharmaceutical compounding. They are not intended for use in a health care setting, where medical examination gloves are preferred.

This letter contains the results of chemical permeation testing performed on the following KIMTECH* Cleanroom Gloves:

- 1) KIMTECH PURE* G3 Sterile White Nitrile gloves
- 2) KIMTECH PURE* G3 White Nitrile gloves
- 3) KIMTECH PURE* G3 NxT* Nitrile gloves
- 4) KIMTECH PURE* G3 Sterile STERLING* NITRILE gloves
- 5) KIMTECH PURE* G3 STERLING* NITRILE gloves
- 6) KIMTECH PURE* G5 STERLING* NITRILE gloves

ASTM D 6978-05 (Standard practice for assessment of resistance of medical gloves to permeation by chemotherapy drugs) was utilized to complete the chemotherapy & hormone drug performance assessment on the above glove products. Testing was performed on the cuff area of the gloves, under conditions of continuous contact.

We must caution that the selection of the most appropriate glove for a specific task should be carried out by a trained safety professional following a full risk assessment. It is Kimberly-Clark's intent to provide data which can enable trained professionals to make an informed choice.

Test Results are summarized on the following pages.

1) KIMTECH PURE* G3 Sterile White Nitrile gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	30.4 (Caution – breakthrough detected in < 60 min)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	No breakthrough up to 240 mins
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
Hormone Drug	Concentration	Breakthrough Time (mins)
Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins

2) KIMTECH PURE* G3 White Nitrile gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	30.4 (Caution – breakthrough detected in < 60 min)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	No breakthrough up to 240 mins
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
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Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins

3) KIMTECH PURE* G3 NxT* Nitrile gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	30.4 (Caution – breakthrough detected in < 60 min)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	No breakthrough up to 240 mins
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
Hormone Drug	Concentration	Breakthrough Time (mins)
Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins

4) KIMTECH PURE* G3 Sterile STERLING* NITRILE gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	20.4 (Not for use with Carmustine)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	110.5
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
Hormone Drug	Concentration	Breakthrough Time (mins)
Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins

5) KIMTECH PURE* G3 STERLING* NITRILE gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	20.4 (Not for use with Carmustine)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	110.5
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
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Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins

6) KIMTECH PURE* G5 STERLING* NITRILE gloves

Chemotherapy Drug	Concentration (mg/ml)	Breakthrough Time (mins)
Carmustine	3.3	20.4 (Not for use with Carmustine)
Cisplatin	1.0	No breakthrough up to 240 mins
Cyclophosphamide (Cytoxan)	20.0	No breakthrough up to 240 mins
Dacarbazine (DTIC)	10.0	No breakthrough up to 240 mins
Doxorubicin Hydrochloride	2.0	No breakthrough up to 240 mins
Etoposide (Toposar)	20.0	No breakthrough up to 240 mins
Fluorouracil	50.0	No breakthrough up to 240 mins
Ifosfamide	50.0	No breakthrough up to 240 mins
Mitoxantrone	2.0	No breakthrough up to 240 mins
Paclitaxel (Taxol)	6.0	No breakthrough up to 240 mins
Thiotepa	10.0	110.5
Vincristine Sulphate	1.0	No breakthrough up to 240 mins
Hormone Drug	Concentration	Breakthrough Time (mins)
Estradiol USP Micronized*	30%	No breakthrough up to 240 mins
Progesterone USP Micronized*	30%	No breakthrough up to 240 mins
Testosterone USP Micronized*	30%	No breakthrough up to 240 mins
Estradiol PCCA USP dilution	10 mg/gm	No breakthrough up to 240 mins



Footnote:

*30% suspension in propylene glycol

Tests were carried out by an independent laboratory, under laboratory test conditions. These tests may not adequately replicate any specific condition of use. As KIMBERLY-CLARK* has no detailed knowledge or control over the conditions of end use, this data must be considered advisory only and KIMBERLY-CLARK* must decline any liability.

We hope this information has been useful. If you require further assistance, please contact us at 1-800-255-6401.

Regards,

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Kimberly-Clark Professional*