

**University of Michigan Health System  
Department of Pharmacy Services  
Stability of Immunizations Exposed to Out-of-Range Refrigerator Temperatures**

Vaccine	( $\leq 34$ F / $\leq 1.1$ C) ◀Below Range▶	35 to 46 F (1.7 to 7.8 C)	( $\geq 47$ F / $\geq 8.3$ C) ▶Above Range▶
<u>Diphtheria &amp; Tetanus Toxoid, Adsorbed</u> <b>DT</b> – Pediatric (Sanofi)  <b>Td</b> – Adult (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified  Per Sanofi: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Product can tolerate <b>4 days</b> at room temperature ( $<100^{\circ}\text{F}$ ) <sup>1</sup>  Product can tolerate <b>4 days</b> at room temperature ( $<100^{\circ}\text{F}$ ) <sup>1</sup>
<u>Diphtheria &amp; Tetanus Toxoid, Acellular Pertussis</u> <b>Infanrix</b> (DTaP) – Pediatric (Glaxo)  <b>Adacel</b> (Tdap) – Adol/Adult (Sanofi)	Per Glaxo: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified  Per Sanofi: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Glaxo: <b>May still be stable, need to contact DIS with information below</b> <sup>2</sup>  Per Sanofi: <b>May still be stable, need to contact DIS with information below</b> <sup>2</sup>
<u>DTaP + Haemophilus</u> <b>TriHIBit</b> (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Sanofi: <b>May still be stable, need to contact DIS with information below</b> <sup>2</sup>
<u>DTaP + Hepatitis B + Inactivated Poliovirus</u> <b>Pediarix</b> (Glaxo)	Per Glaxo: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Stability for <b>24 hours</b> has been shown up to $77^{\circ}\text{F}$ <sup>1</sup>
<u>Haemophilus</u> <b>ActHIB</b> (Sanofi )  <b>PedvaxHIB</b> (Merck)	Per Sanofi: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified  Per Merck: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Sanofi: <b>May still be stable, need to contact DIS with information below</b> <sup>2</sup>  Per Merck: <b>May still be stable</b> , Merck will calculate the time out of refrigeration remaining on the product; therefore <b>need to contact DIS with the information below</b> <sup>2</sup>
<u>Haemophilus + Hepatitis B</u> <b>Comvax</b> (Merck)	Per Merck: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: <b>May still be stable</b> , Merck will calculate the time out of refrigeration remaining on the product, therefore <b>need to contact DIS with the information below</b> <sup>2</sup>
<u>Hepatitis A</u> <b>Havrix</b> (Glaxo)	Per Glaxo: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Product stability has been demonstrated for <b>7 days</b> up to $98.6^{\circ}\text{F}$ <sup>1</sup>
<u>Hepatitis B</u> <b>Recombivax</b> (Merck)  <b>Engerix-B</b> (Glaxo)	Per Merck: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified  Per Glaxo: <b>Vaccine Cannot Be Used</b> ; Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: <b>May still be stable</b> , Merck will calculate the time out of refrigeration remaining on the product, therefore <b>need to contact DIS with the information below</b> <sup>2</sup>  Product stability has been demonstrated for <b>7 days</b> up to $98.6^{\circ}\text{F}$ <sup>1</sup>

<u>Human Papillomavirus Vaccine</u> <b>Gardasil</b> (Merck)	Per Merck: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>
<u>Influenza A &amp; B</u> <b>Fluzone</b> (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used if frozen (&lt;32 F); Exposure to temp of 32 F to 35 F okay as long as no freezing occurs;</b> Return to normal refrigerator temperatures ASAP	Normal Range for Vaccine Storage in a Refrigerator	Per Sanofi: <b>May still be stable,</b> Sanofi will calculate the time out of refrigeration remaining on the product, therefore <b>need to contact DIS with the information below<sup>2</sup></b>
<u>Measles, Mumps &amp; Rubella</u> <b>MMR II</b> (Merck)	Per Merck: <b>Vaccine remains okay to use,</b> it may be stored either at normal refrigerator or freezer temperatures. (Store diluent at room temperature or refrigerate.)	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: <b>May still be stable,</b> Merck will calculate the time out of refrigeration remaining on the product, therefore <b>need to contact DIS with the information below<sup>2</sup></b>
<u>Meningococcal Conjugate Vaccine</u> <b>Menactra</b> (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used;</b> Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Sanofi: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>
<u>Meningococcal Polysaccharide Vaccine</u> <b>Menomune</b> (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used;</b> Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Powder can tolerate 6-8 weeks at room temperature. <sup>1</sup>
<u>Pneumococcal Vaccine;</u> <u>7-valent</u> <b>Prennar</b> (Wyeth) - Pediatric	Per Wyeth: <b>Vaccine Cannot Be Used;</b> Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Wyeth: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>
<u>Pneumococcal Vaccine;</u> <u>23-valent</u> <b>Pneumovax 23</b> (Merck) - Adult	Per Merck: <b>Vaccine Cannot Be Used;</b> Return to DOPS Clearly Identified	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: Product can tolerate a few days at room temperature <sup>1</sup>
<u>Poliovirus Vaccine, Inactivated</u> <b>Ipol</b> (Sanofi)	Per Sanofi: <b>Vaccine Cannot Be Used if frozen (&lt;32 F); Exposure to temp of 32 F to 35 F okay as long as no freezing occurs;</b> Return to normal refrigerator temperatures ASAP	Normal Range for Vaccine Storage in a Refrigerator	Per Sanofi: <b>May still be stable, need to contact DIS with the information below<sup>2</sup></b>
Rabies Vaccine Kit <b>RabAvert</b> (Chiron)	Per Chiron: Product is still stable if frozen, but must check for cracks in the vials.	Normal Range for Vaccine Storage in a Refrigerator	Per Chiron: Product is stable for 1 year up to 68°F.
<u>Rotavirus Vaccine Live, Oral</u> <b>RotaTeq</b> (Merck)	Per Merck: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>	Normal Range for Vaccine Storage in a Refrigerator	Per Merck: <b>May still be stable, need to contact DIS with information below<sup>2</sup></b>

DOPS = Department of Pharmacy Services: Pharmacy Returns/ 1500 E. Medical Center Dr./ Rm. B2 D400/ Ann Arbor, MI 48109-5008

1. Grabenstein JD. *ImmunoFacts: Vaccines and Immunological Drugs*. St. Louis, MO: Wolters Kluwer Health; 2006

2. Where indicated, contact the Drug Information Service (734-936-8200) with the following information:

- Name of vaccine(s) affected;
- Whether opened or unopened;
- Length of time vaccines were exposed to out-of-range temperature;
- Lot # and expiration date (for frozen vaccines only – see below)

Drug Information will contact the manufacturer to determine stability of vaccines; Note this process may take several hours

Created by: Michelle Leady, PharmD; Approved by the Immunization Committee: October 2002

Last revision: June 2007

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Department of Pharmacy Services  
Stability of Immunizations Exposed to Out-of-Range *Freezer* Temperatures**

Vaccine	(≤-15C/+5F) ◀Recommended▶	-15C to 8 C (5F to 46F)	≥ 47 F
<u>Measles, Mumps, Rubella, and Varicella Vaccine</u> <b>ProQuad/MMRV</b> (Merck)	Vaccine should be stored at -15C (+5F) or colder until reconstituted for injection. (Store diluent separately at room temperature or in the refrigerator.)	Contact manufacturer for exposure to above range temperature	Contact manufacturer for exposure to above range temperature
<u>Varicella Vaccine, Live</u> <b>Varivax</b> (Merck)	Vaccine should be stored at -15C (+5F) or colder until reconstituted for injection. (Store diluent separately at room temperature or in the refrigerator.)	<u>Product remains stable if exposed to refrigerator temperatures for up to 72 hours prior to reconstitution</u>	Loss of potency may result, therefore cannot use if exposed to Room Temperature for > 30 minutes prior to administration
<u>Zoster Vaccine, Live</u> <b>Zostavax</b> (Merck)	Vaccine should be stored at -15C (+5F) or colder until reconstituted for injection. (Store diluent separately at room temperature or in the refrigerator.)	Contact manufacturer for exposure to above range temperature	Contact manufacturer for exposure to above range temperature

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