

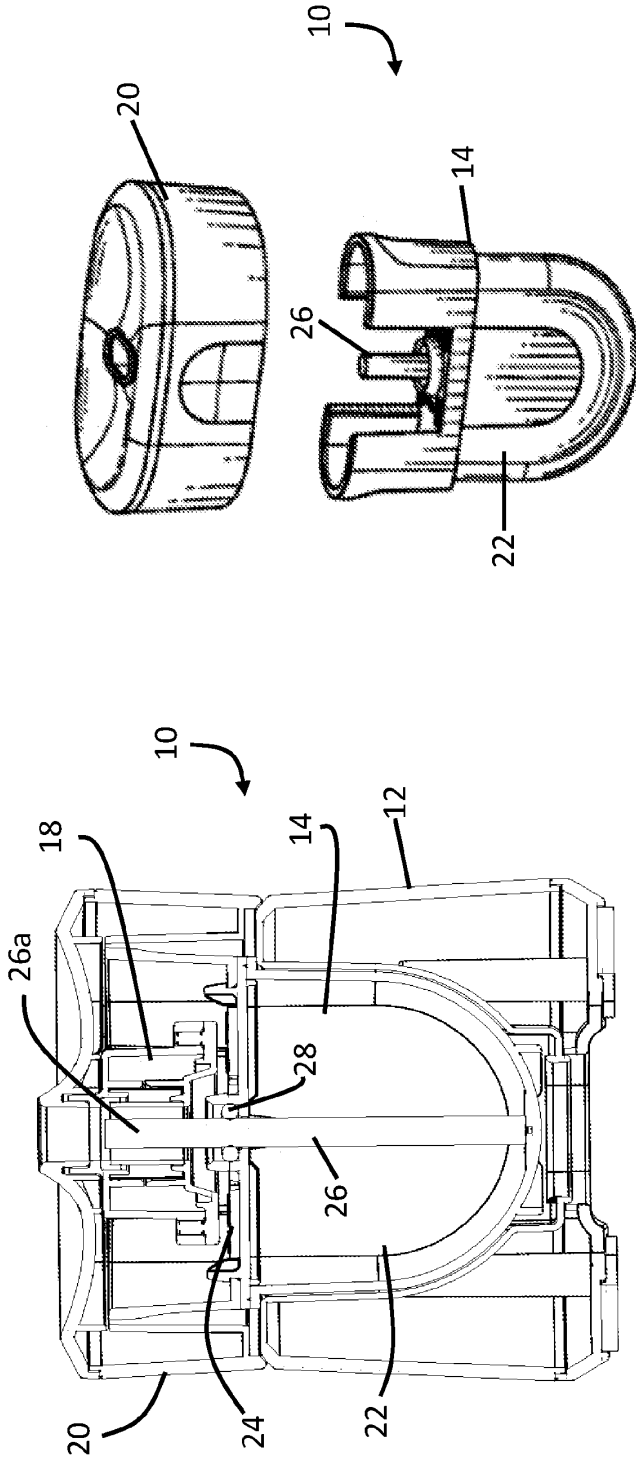


Fig. 1

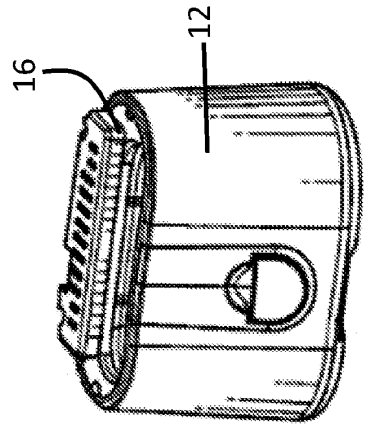


Fig. 2

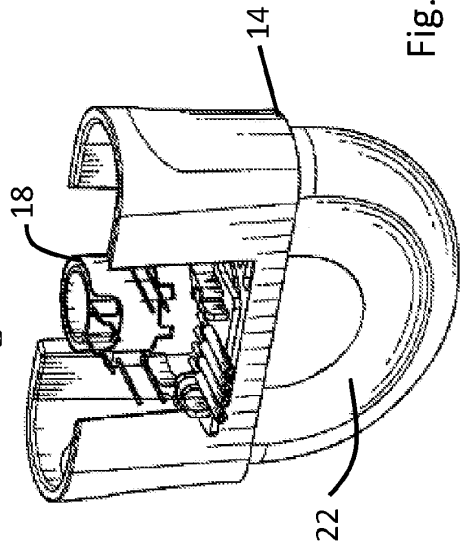


Fig. 3

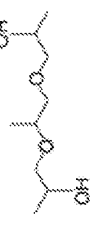
Table 1. Identity and physical properties of tested glycol solvents						
#	Glycol Solvent Name	CAS #	Density (g/cm ³)	Boiling Point or Range (°C)	Dynamic Viscosity at 20°C or 25°C (cP)	Molecular Formula (C _x H _y O _z) Molecular Structure
1	Ethylene glycol	107-21-1	1.11	197	21	C ₂ H ₆ O ₂ 
2	Propylene glycol	57-55-6	1.04	188	42	C ₃ H ₈ O ₂ 
3	Hexylene glycol	107-41-5	0.92	197	34	C ₆ H ₁₄ O ₂ 
4	Diethylene glycol	111-46-6	1.11	245	30	C ₄ H ₁₀ O ₃ 
5	Dipropylene glycol	25265-71-8	1.02	229-232	84	C ₆ H ₁₄ O ₃ 
6	Triethylene glycol	112-27-6	1.12	285	48	C ₆ H ₁₄ O ₄ 
7	Tripropylene glycol	24800-44-0	1.02	271	84	C ₈ H ₁₈ O ₄ 
8	Tetraethylene glycol	112-60-7	1.12	324-330	62	C ₈ H ₁₈ O ₅ 
9	2-Ethylhexane-1,3-diol	94-96-2	0.94	243	323	C ₈ H ₁₈ O ₂ 
10	Glycerol	56-81-5	1.21	290	1070	C ₃ H ₈ O ₃ 

Fig. 4

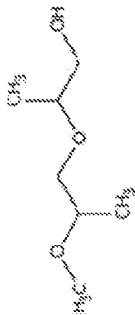
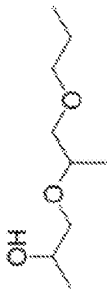
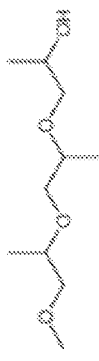
Table 2. Identify and physical properties of tested glycol-related solvents								
#	Glycol-Related Solvent Name	CAS #	Density (g/cm ³)	Boiling Point or Range (°C)	Dynamic Viscosity at 20°C or 25°C (cP)	Molecular Formula (C _x H _y O _z)	Molecular Weight (g/mol)	Molecular Structure
1	Diethylene glycol methyl ether	111-77-3	0.95	190	NA	C ₆ H ₁₂ O ₆	120.15	
2	Dipropylene glycol methyl ether	13598-28-8	0.95	184	NA	C ₇ H ₁₄ O ₅	148.20	
3	Dipropylene glycol propyl ether	29911-27-1	0.92	212	4.7	C ₉ H ₁₈ O ₅	176.25	
4	Dipropylene glycol methyl ether acetate	88917-22-0	0.98	290	1.7	C ₉ H ₁₈ O ₄	190.24	
5	Tripropylene glycol methyl ether	25498-49-1	0.97	242	NA	C ₁₀ H ₂₀ O ₄	206.28	
6	Isopropylidene glycerol	100-79-8	1.07	191	11	C ₈ H ₁₆ O ₃	132.16	

Fig. 5

Table 3. Pyrethroid solubility in tested glycol solvents				
#	Glycol Solvent Name	Metofluthrin	Prallethrin	Transfluthrin
1	Ethylene glycol	Y	N	ND
2	Propylene glycol	Y	N	ND
3	Hexylene glycol	Y	Y	Y
4	Diethylene glycol	Y	N	ND
5	Dipropylene glycol	Y	Y	ND
6	Triethylene glycol	Y	N	ND
7	Tripropylene glycol	Y	Y	ND
8	Tetraethylene glycol	Y	Y	ND
9	2-Ethylhexane-1,3-diol	Y	Y	ND
10	Glycerol	Y	ND	ND
Y = Yes, soluble;		N = No, not soluble;	ND = Not determined	

Fig. 6

Table 4. Pyrethroid solubility in tested glycol-related solvents

#	Glycol-Related Solvent Name	Metofluthrin	Prallethrin	Transfluthrin
1	Diethylene glycol methyl ether	ND	ND	ND
2	Dipropylene glycol methyl ether	ND	ND	ND
3	Dipropylene glycol propyl ether	Y	ND	ND
4	Dipropylene glycol methyl ether acetate	ND	ND	ND
5	Tripropylene glycol methyl ether	ND	ND	ND
6	Isopropylidene glycerol	Y	Y	ND

Y = Yes, soluble; N = No, not soluble; ND = Not determined

Fig. 7

Table 5. Device component compatibility and vaporization rate with tested glycol solvents						
#	Glycol Solvent Name	Acrylonitrile butadiene styrene (ABS)	Polycarbonate	Nitrile rubber	Composite (Wick Swelling)	Vaporization Rate (mg/hour)
1	Ethylene glycol	N	N	N	R	92
2	Propylene glycol	N	N	N	R	110
3	Hexylene glycol	N	N	N	N	108
4	Diethylene glycol	ND	ND	ND	ND	ND
5	Dipropylene glycol	N	N	N	R	62
6	Triethylene glycol	ND	ND	ND	ND	41
7	Tripropylene glycol	N	N	N	ND	ND
8	Tetraethylene glycol	N	N	N	R	35
9	2-Ethylhexane-1,3-diol	N	N	N	R	37
10	Glycerol	N	N	N	N	29

R = Reactivity observed, not compatible; N = No reactivity observed, compatible; ND = Not determined

Fig. 8

Table 6. Device component compatibility and vaporization rate with tested glycol-related solvents

#	Glycol-Related Solvent Name	Acrylonitrile butadiene styrene (ABS)	Polycarbonate	Nitrile rubber	Composite (Wick Swelling)	Vaporization Rate (mg/hour)
1	Diethylene glycol methyl ether	ND	ND	R	ND	ND
2	Dipropylene glycol methyl ether	ND	ND	R	ND	ND
3	Dipropylene glycol propyl ether	R	NR	NR	ND	ND
4	Dipropylene glycol methyl ether acetate	R	R	ND	ND	ND
5	Tripropylene glycol methyl ether	ND	ND	ND	ND	ND
6	Isopropylidene glycerol	R	ND*	ND*	ND	ND

R = Reactivity observed, not compatible; N = No reactivity observed, compatible; ND = Not determined

*Not determined because test was terminated early (after 1 hour) due to severe ABS reactivity. Incompatibility was typically evaluated after testing exposure up to hours.

Fig. 9

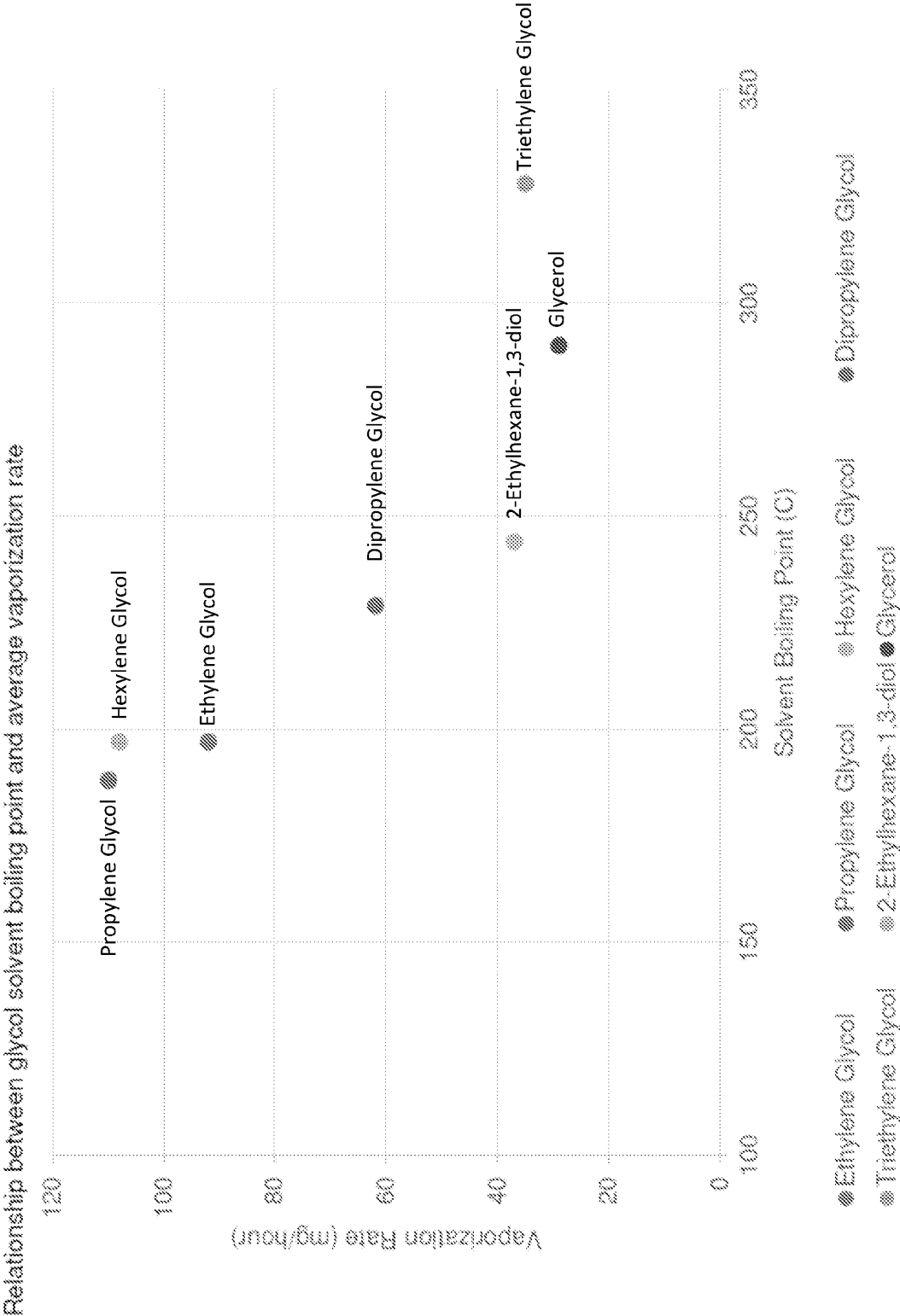


Fig. 10