

Table 1. Caustic and chlorine contents in detergent-sterilizer products on the Irish market (Teagasc, April, 2012). Product names in order of decreasing caustic content.

Product Name	PCS number	% Caustic	*Working solution (ppm)		% Chlorine	*Working solution (ppm)	
			Hot wash	Cold wash		Hot wash	Cold wash
These products are best used in a daily hot wash with option of re-using solution as a cold wash at the next milking.							
Megasant	96852	20.91	1394	1626	3.63	240	280
Unisan Liquid		18.77	1251	1877	3.81	254	381
Cryosan liquid	96895	18.67	1245	1867	3.45	230	345
Dairygold Hotwash XT	96461	18.34	1467	1651	2.61	209	235
Hydrosan Liquid	93608	17.69	1179	1769	3.05	203	305
Puresan line cleaner	96216	17.48	1165	1748	2.31	154	231
Kilcosan		17.13	476	1599	3.62	101	338
Parlorsan	96404	17.14	1371	1600	3.68	294	343
Co-op Turbosan	96322	16.71	1337	1485	3.48	278	309
Avalksan	96840	16.54	1286	1470	3.49	271	310
Multisan	93472	16.42	1314	1460	3.43	274	305
Kleensan		16.31	1305	1468	3.31	265	298
Supersan Extra	96574	16.12	1017		3.13	198	
Ultrasan		16.06	1428	1428	5.18	460	460
Universan	96324	15.94	1275	1417	3.49	279	310
Agrisan extra		15.81	966	1405	3.64	222	324
Liquid Gold	96468	14.35	995	1196	3.80	263	317
Aquasan		14.03	1247	1247	3.01	268	268
Target liquid		14.11	970	1235	3.27	225	286
Unisan Liquid Gold		14.02	935		3.43	229	
Galvisan Plus		12.84	803	1124	3.45	216	302
Buyrite		12.50	972	1167	2.54	198	237
Mueller extra strength		11.50	958	958	2.64	220	220
These products should be used with hot water daily and the solution not recycled.							
Vanorinse		11.23	351	x	4.69	147	x
CircoactionAF1	96147	10.09	505	x	6.96	348	x
Vanosan		9.99	500	x	3.23	161	x
C-Alka		9.89	495	x	3.12	156	x
DeLaval super		8.95	716	x	2.84	227	x
Autoklene	95652	9.34	467	x	2.65	133	x
Deosan TC86	94490	9.30	465	x	3.71	185	x
Chlorodex	95654	9.21	461	x	2.84	142	x
EmpraSan		9.20	460	x	3.00	150	x
Hyproclo ED	96263	8.75	486	x	4.49	249	x
Alkasan	95651	7.86	82	x	1.63	393	x
Dairy-Chlor		7.26	227	454	3.48	109	218
Specsan (extra strong)		7.14	446	x	4.15	259	x
Delaval ultra		6.36	318	636	2.55	128	255
CircopowerAFM	96148	5.43	190	x	6.13	215	x

Dairycleanse		4.32	269	x	3.04	189	x
Liquid dairygold hot		3.90	293	x	7.57	473	x
Supersan	96405	3.69	233	x	7.53	475	x
Rinsan		3.30	206	x	5.52	345	x
Galvisan		2.84	89	x	9.35	292	x
BFS hotwash		2.10	140	x	9.59	639	x
DelexH	94667	0.84	53	53	6.68	418	418

- **PCS number = Pesticide control service number, indicates that the product is registered with DAFF and therefore can be legally placed on the Irish market**

PCS numbers obtained from DAFF website (www.pcs.agriculture.gov.ie/biocidalproductregisterApril2011.pdf).

- Working solutions are calculated based on manufactures recommended usage rates and chemical content of products
- A minimum of 800 ppm of caustic in the working solution is recommended for hot cleaning where the product is reused cold for the afternoon wash. Higher working solutions are required if a hot wash is not used daily
- Lower usage rates may be considered for products with high caustic % when used hot and the solution is not recycled
- Detergents with a lower caustic working solution (<800ppm) will give satisfactory cleaning when used with hot water and the solution is not recycled.
- Increasing the usage rate of products to achieve higher caustic levels may result in non-acceptable levels of chlorine in the working solution.
- Acceptable chlorine levels in the working solution range between 150 and 320 ppm
- **Table 2. Caustic content in liquid detergent products on the Irish market (Teagasc, April, 2012).** Product names in order of decreasing caustic content in the working solution with cold washing

Product Name	Hot wash			Cold wash	
	% Caustic w/w	Usage rate (grams/litre)	*Working solution (ppm)	Usage rate (grams/litre)	*Working solution (ppm)
P3-mipCIP	27.72	6.7	1848	10.0	2772
ParlosanNC**	24.34	10.0	2434	11.1	2704
Multisan CF**	25.42	6.7	1695	10.0	2542
Timac CIP	28.08	6.2	1747	8.9	2496
Quantum x L	22.33	2.5	558	x	x
Alkadex Forte	20.55	5.0	1028	x	x
Hypral SP	15.88	6.7	1059	x	x
Sanagard	10.48	5.0	524	x	x

* Working solutions are calculated based on manufactures recommended usage rates and % caustic measured in products

** The addition of hydrogen peroxide to these products is recommended by manufacturers as part of a good cold/hot wash program

- An additional acid descale wash should be carried out at a minimum once weekly with all products

Table 3: Caustic content in powder detergent products on the Irish market (Teagasc, April, 2012). Products names are listed in alphabetical order

Product Name	PCS number	Usage rate (grams/litre)	*Working solution (ppm)
			Caustic
Alfasan Plus	N/A	5.6	4500
BFS cold wash	N/A	5.0	4700
C6 DeLaval***	94350	3.8	3600
CircodineP***	93464	5.0	2900
Circodine CF	N/A	5.0	2300
CiproproAP***	96149	3.8	1400
Cold Clean Plus	N/A	5.0	4400
Cold wash Evans	N/A	5.0	4300
Cold wash agrosolve	N/A	5.0	2700
Cryosan Plus	N/A	5.0	4200
Crystal Powder cold cleaner	N/A	2.5	3600
Dairygold cold circulation cleaner	N/A	5.6	5300
Dairy-clean plus	N/A	5.6	3900
Dairy-san **	N/A	3.8	1600
D90***	94751	2.5	2000
Deosan Farm Cold Cleaner	N/A	5.0	4200
Duosan50***	95667	3.1	800
Galvisan cold wash	N/A	5.0	4800
Hydrosan Plus	N/A	5.0	3500
Jet Star	N/A	5.0	3600
Kilco Clearway	N/A	5.0	3700
Koldosan	N/A	5.0	2000
Koldklene	N/A	5.0	3900
Locount Extra	N/A	5.0	3200
Metron powder	N/A	3.8	2700
Muller cold detergent	N/A	5.0	4300
Polarsan Plus	N/A	5.6	4700
PureChem cold wash	N/A	5.0	3700
PureChem hot wash**	N/A	2.5	1100
Trisan Extra	N/A	3.8	2200
Turboclean	N/A	5.6	5000
Unisan Plus	N/A	5.0	5000

N/A = not applicable (as contains no chlorine)

*Working solutions are calculated based on manufactures recommended usage rates and chemical content of products

- *** Products contain some chlorine
- Working solutions above 2000ppm are recommended for powder cold caustic cleaning products containing no chlorine. Lower working solutions (800ppm) of caustic may be used with products containing chlorine and with products recommended to be used with hot water**
- Some products contain high levels of sodium carbonate while other products contain high levels of non caustic alkaline detergents which have additional cleaning benefits.
- An additional acid descale wash should be carried out at a minimum once weekly with all products

Table 4: Chlorine content in sterilizer products on the Irish market (Teagasc, April, 2012)

Product names listed in alphabetical order

Product Name	PCS number	% Chlorine w/w	usage rate (mls/litre)	**Working solution (ppm)
Chlinichlor	95653	8.60	2.5	215
CO-OP source chloros	96321	8.12	2.5	203
Dairy Hypochlorite	96163	9.92	2.2	220
DairyChlor		6.95	3.8	263
Deosan Red Label	94183	10.07	2.5	252
Galvichlor		9.11	2.5	228
Kilcosan Hypochlorite		8.82		
Micro-Chlor	94992	9.33	2.5	233
Red Label	95409	7.80	2.5	195
Sodium Hypochlorite (Cryosan)	96898	11.73	3.8	443
Spechlor		8.35	2.5	209
Superblend Hypochlorite		8.86	3.9	345
Ultrachlor	94457	10.69	2.5	271

**Working solutions are calculated based on manufactures recommended usage rates and % chlorine measured in products

- All sterilizer products contain adequate levels of chlorine
- To be used as recommended by manufacturers **for use once weekly** in conjunction with caustic detergent