Monadnock Paper Mills
Bennington, NH

Emission Inventory and Dispersion Modeling Report

Worksheets

Revised	5/5/2009	
Revised	8/10/2010	Tox Eval for PM and Coater with latest ENV_A 1450 values of November 25, 2009
Revised	6/14/2011	Reflects additonal data requested by DES per meeting on 5/4/11
Revised	7/7/2012	Added formaldehyde potential generation evaluation and included all materials with fc
		Modified certain emission calculations
		Highlighted changes from June 2012 Revisions in
		Added Table 1B and 1C for the evalutin of formaldehyde generation potential

ɔrmaldehyde at less than 0.1% per MSDS

Monadnock Paper Mills
Bennington, NH

Table 1A
6/14/2011

Processed Raw Materials used in 2010

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20044	HERCON 70 (12.5%)	1190	alkyl ketene dimer emulsion	sizing agent	1/0/0	x			40250	n	n	n	n	n	n	n	
P20045	ALUM, ALUMINUM SULFATE (49%)	717	aluminum sulfate	17927-65-0-liquid	1/0/0	x			276091	y	n	n	y	n	n	n	
P20046	SODIUM ALUMINATE-38-45 %	2168	sodium aluminate-38%-1302-42-7	naoh solution	3/0/2	x			7246	y	n	n	y	y	n	n	
P20047	SODA ASH LIGHT	1674	sodium carbonate	497-19-8	1/0/0	x			82282	y	n	n	n	n	n	n	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %		1/1/0	x			22028	y	n	n	y	n	n	n	
P20052	PALE FLUID PEXOL 50 SIZE (50%)	873	rosin sizing agent	aqueous soln	1/1/0	x			9357	n	n	n	n	n	n	n	sol
P20056	AEROSOL 501 SURFACTANT	405	disodiumisodecyl/sulfosuccinate	surfactant 37294-49-8	1/1/0		x		2755	n	n	n	y	n	n	n	sol
P20057	PLASMINE PLH 50 SIZE (50%)	1077	rosin sizing agent	trace ammonia <1 %	1/0/0	x			126082	y	n	n	y	n	n	n	
P20058	DETAC DC3970	1657	stickies control	WB detackifyer	1/0/0	x			33736	n	n	n	n	n	n	n	
P20059	DARA-SPRAY FP5500	1505	stickies control	polymer	0/0/0	x			3910	n	n	n	n	n	n	n	
P20060	OMYAFIL 72%	243	round limestone-calcium carbonate	1317-65-3	0/0/0	x	x		2629693	y	n	n	y	n	n	n	no sol
P20063	X-2111 CLAY (DRY, BAGS)	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x		x	10800	y	n	n	n	n	n	n	no sol
P20065	HIBRITE CLAY SLURRY	797	clay slurry-kaolin	0.-2.5 % tio2	0/0/0	x			62491	y	n	n	y	n	n	n	no sol
P20066	REGULAR CLAY FILLER SLURRY	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x			357405	y	n	n	n	n	n	n	no sol
P20068	MISTRON VAPOR TALC	3389	talc-magnesium silicate 14807-96-6 99%		1/0/0	x			136063	y	n	n	n	n	n	n	
P20070	ANSILEX 93 CLAY	609	clay-kaolin--aluminum silcate powder	0.4-2%-tio2	0/0/0	x			397923	y	n	n	n	y		n	not sol
P20072	HYDRAD C (HYDRATED ALUMINIA)	722	al2O3 slurry	1344-28-1	0/1/0	x			30800	y	n	n	y	n		n	not sol
P20073	PYROLUX 585D	2993	ammonium sulfamate/sulfamic acid	fire retardant	2/1/0		x		7532	y	n	n	y	n	n	n	
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA		0/0/0		x		66909	n	n	n	n	n	n	n	sol.prop 6 warning
P20076	SCRIPSET 520 RESIN	658	styrene maleic anhydride polymer, 0.85% styrene	32959-78-1 powder	1/0/0		x		17729	y	n	y	n	y	y	n	0.1 %demin
P20079	AURALUBE 243 LIQUID EMULSION	1329	EG 1-5% 107-21-1,nonylphenylethoxylate 5-10% 127087-87-0	polyetylene emulsion	2/1/0		x		21539	y	n	y	y	n	n	n	
P20081	POLYGRAPHICS C	1501	polyurethane solution		1/1/0	x	xxxxx		6726	n	n	n	n	n	n	n	
P20084	A-25 CATALYST (25%)	1331	ammonium chloride 25% 12125-02-9		2/1/0		x		6650	y	n	n	y	n	n	n	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant		1/1/0		x		34200	n	n	n	n	n	n	n	
P20086	AURALUBE MPW II WAX (35%)	1330	alkylpolyglycolether 5-10% 9004-98-2,1-5% dodecylbenzenesulfonic acid 27176-87-0-lubricant		2/1/0		x		783	y	n	n	y	n	n	n	
P20087	AQUA AMMONIA 26	728	ammonium hydroxide 30%	7664-41-7	3/1/0		x	x	30391	y	y	y	y	y	y	n	95% DE
P20091	PONTAMINE BRILLIANT VIOLET BRW	1943	urea 10-20 %-57-13-5,triethanol amnine 102-71-6 <5%,triethanolamine hydrochloride 637-39-8 <5%	dye	1/1/1		x		511	n	n	n	n	n	n	n	
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	dye	0/1/0	xxxx			193	n	n	n	n	n	n	n	
P20095	CATO-SIZE 270A STARCH	2132	cationic corn strach		1/1/0	x			4619	n						n	
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	chloromethylisothiozolinone 55965-84-9-0.1 %	1/1/0		xxxxx		464011	y	n	n	y	n	n	n	95 % DE
P20099	PONTAMINE FAST TURQUOISE 8GLP LIQUID	370	copper 2 %	triethanolamine 102-71-6 10-15%	1/1/0		xxxxx		161	y	n	n	y	n	n	n	
P20111	INTRABOND LIQUID YELLOW 5GA	2383	triethanolamine 10 %	dye	2/1/0	x			1233	y	n	n	y	n	n	n	
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	pigment	0/1/0	x			4433	n	n	n	n	n	n	n	
P20123	CAUSTIC SODA FLAKES	449	sodium hydroxide-solid		3/0/1				4214	y	n	n	y	n	n	n	
P20127	PONT FAST RED 8 BLX DRY	741		pigment	0/1/0	x			86	n	n	n	n	n	n	n	
P20129	HALOPONT BLUE RNM LIQUID DYE	3077	56-81-5 glycerine 2%,	pigment	1/1/0	x			348	y	n	n	y	n	n	n	
P20130	LEUCOPHOR B-302 OPTICAL BRIGHT	637	stilbenen brightener	dye	1/1/0	x			143	y	n	n	n	n	n	n	
P20134	5G BRILLIANT YELLOW DRY DYE	515	naoh 2%, lead 2.94%	dye	1/1/1	x			88	y	n	n	y	n	n	n	
P20135	BAYFERROX YELLOW 1420M IRON OX	389	iron oxide	pigment	0/0/0	x			223	n	n	n	n	n	n	n	
P20136	SUPRA YELLOW GY PONOLITH LIQUI	1364	Ni 0.87% 7440-02-0	pigment	1/1/0	x			1115	y	n	n	y	y	n	n	
P20139	PONT FAST SCARLET 4B LIQUID DY	1638	azo dye	Co 1.24ppm	0/1/0	x			12153	n	n	n	n	n	n	n	
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm		1/1/0	x			2373	y	n	n	y	y	n	n	
P20143	RUTILE TITANIUM DIOXIDE (BAGS)	502/3306	tio2 powder		0/0/0	x			70255	y	n	n	y	y	n	n	
P20145	HYDROCARB 90	739	calcium carbonate		1/0/0	x		x	724581	y	n	n	y	n	n	n	
P20149	alcosperse 149	745	sodium polyacrylate in water	acrylic acid	1/0/0			x	5216.09	y	n	y	y	n	n	n	tri acrylic acid
P20150	ISOPROPYL ALCOHOL 99%	667	isopropyl alc 99%	67-63-0	2/3/0			x	1183	y	n	n	y	n	y	n	
P20155	ACRONAL S 504	2373	acrylate polymer dispersion		1/1/0			x	320548	n	n	n	n	n	n	n	
P20158	VYCARTIN 842-30 LATEX	2369	vinylchloride copolymer		1/0/0			x	1225.1	n	n	n	n	n	n	n	
P20162	ropaque HP1055	1874	styrene acrylic copolymer	ammonia 0.1 %	1/0/0			x	821	y	n	n	y	n	n	n	
P20176	PONTAMINE BLACK SP LIQUID	514	nickel,cobalt, urea	dye	0/1/0	x			10659	n	n	n	y	n	n	n	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion		1/0/0			x	29589	y	n	n	n	n	n	n	
P20182	25-2819 LATEX	3057	cross linking agent	vinyl acetate 0.6 %	1/0/0		x		10780	y	n	y	y	n	n	n	check VAM
P20286	HYCAR 26707 LATEX (60%)	2165	acrylic polymer emulsion		1/0/0		x		1515486	n	n	n	n	n	n	n	
P20289	HYDROCARB 60 (CAL. CARBONATE)	739	calcium carbonate		1/0/0	x		x	179279	y	n	n	n	n	n	n	
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer		1/0/0			x	4534	n	n	n	n	n	n	n	
P20316	GLYCERINE	1035	vegetable derived		2/1/0		x	x	11992	y	n	n	y	y	n	n	99 % DE
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	lab use	1/0/0			x	2710	n	n	n	n	n	n	n	
P20320	CR SPZ MOLECULAR FIBER	1776	aluminum silicate powder		1/0/0	x			25900	y	n	n	n	n	n	n	
P20326	innofix 240	2739	cationic polymer solution		1/0/0			x	3241	n	n	n	n	n	n	n	
P20348	albacar W-5970	1991	calcium carbonate 471-34-1		0/0/0			x	2325	y	n	n	n	n	n	n	
P20350	PARAGUM 109	2562	thickener		1/1/0			x	73262	n	n	n	n	n	n	n	
P20355	ANATASE TITANIUM DIOXIDE (BAGS)	3050	tio2 powder		0/0/0	x			718065	n	n	n	n	n	n	n	
P20390	Blankophor UW Liquid	3076	whitener agent, urea 15-30%		1/1/0		x		322505	y	n	n	y	n	n	n	

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6/14/2011

Processed Raw Materials used in 2008

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20401	PROPYLENE GLYCOL	2244	propylene glycol 100%-57-55-6		0/1/0			x	21389	n	n	n	n	n	n	n	
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer		0/0/0			x	327	n	n	n	n	n	n	n	
P20415	ALBACAR HO PCC	2710	calcium carbonate slurry		0/0/0	x			20713	y	n	n	y	n	n	n	
P20416	leucophor fts liquid	2585	stilbene flourescent	colorant	1/10			x	1257	n	n	n	n	n	n	n	100% to CTR
P20421	hydrol 710 ath	2885	aluminum trihydroxide slurry		1/1/0	x			216075	y	n	n	y	n	n	n	
P20422	hycar 26391	3082	acrylic emulsion	chloromethylisothiazolidone <0.1 %	2/1/0		x		25708	y	n	n	y	n	n	n	
P20428	pluronic L-61	2764	polyglycol 9003-11-6	surfactant	1/1/0			x	9688	n	n	n	n	n	n	n	
P20443	pontamine yellow GX powder	516	yellow 11		0/1/0	x			526	n	n	n	n	n	n	n	
P20445	Polygraphix bmp	2519	styrene acrylate copolymer dispersion		0/1/0		xxxxx		59756	n	n	n	n	n	n	n	
P20458	albacar HO Pcc Slurry	2710	calcium carbonate slurry		0/0/0	x			1005612	y	n	n	y	n	n	n	
P20461	5152 anionic dry strength	2920	polymer solution		1/0/0	x			5260	n	n	n	n	n	n	n	
P20462	ponolith red wc	2923	1-2% ammonium hydroxide 1336-21-6	pigment	2/1/0	x			1885	y	n	y	y	n	n	n	
P20466	pontamine bril blue a liquid dye	1511	lead 4.3 ppm,cu 1%	pigment	0/1/0	x			7701	n	n	n	n	n	n	n	
P20467	pontamine brilliant violet 6b liquid 50	2954	pigment		0/1/0	x			1499	n	n	n	n	n	n	n	
P20468	STA-LOK 400 CATIONIC STARCH	152	starch		1/0/0	x			5584	y	n	n	n	n	n	n	
P20505	1/4 X 6 dbf BRT TYPE 66 NYLON	1498	fiber nylon		0/0/0	x			700	n	n	n	n	n	n	n	
P20507	kymene 621	2943	1,3 dichloropropanol 96-23-1 -1 %	wet strengthresin	2/0/0	x			120761	y	n	n	y	n	n	n	
P20510	penford 280	566	corn starch		0/1/0		x		1100487	y	n	n	n	n	n	n	
P20511	etacryl 306	2951	acrylic copolymer		1/0/0			x	690	n	n	n	n	n	n	n	
P20523	pontamine bond yellow 303	2965	dye		0/1/0	x			6071	n	n	n	n	n	n	n	
P20528	PENFORD GUM 280 - BAGS	566	corn starch		0/1/0		x		70372	y	n	n	n	n	n	n	
P20530	blankophor p150-us	3083	stilbene dye		0/1/0	x			35016	n	n	n	n	n	n	n	
P20567	Covercarb HP	739	calcium carbonate		1/0/0			x	11123	y	n	n	n	n	n	n	
P20568	Airflex 100 HS	2668	vinylacetate copolymer	<0.5% vinyl acetate monomer	1/0/0			x	89871	n	n	y	n	n	n	n	
P20569	ultra gloss 90	3168	aluminum silicate powder or kaolin	trial	0/0/0			x	17565	y	n	n	n	y	n	n	
P20570	ultra white 90	3169	Kaolin, sio3	trial	0/0/0			x	5180	y	n	n	n	n	n	n	
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	trial	1/0/0			x	1700	n	n	n	n	n	n	n	
P20576	chemcor emulsion	3178	ethen homopolymer emulsion	trial	1/0/0			x	140	n	n	n	n	n	n	n	
P20582	bersize 6409	3226	sizing agent	formaldehyde 0.113 %	2/1/0		xxxxx		24057	y	y	y	y	y	n	n	check formaldehyde
P20583	hycar 26879	3225	acrylic polymer emulsion	trial	1/1/0		x	x	797738	n	n	n	n	n	n	n	
P20590	elcofix lf	3249	resin solution with 8% ethylene glycol 11-46-6	trial	2/1/0	x			48351	y	y	y	y	y	n	n	
P20591	elcoment red RP	3250	ammonia 0.4 % 7664-41-7		1/1/0	x			48351	y	n	n	y	n	n	n	
P20592	elcoment red nr	3251	aqueous pigment		1/1/0	x			878	n	n	n	n	n	n	n	
P20593	elcoment yellow pnb	3252	aqueous pigment		1/1/0	x			6989	n	n	n	n	n	n	n	
P20594	elcoment yellow yp	3253	aqueous pigment		1/1/0	x			1199	n	n	n	n	n	n	n	
P20595	elcoment red GP	3254	aqueous pigment		1/1/0	x			536	n	n	n	n	n	n	n	
P20597	aersol ot-75	2975	surfactant	ethanol 6-7%-lab	2/3/0			xxxxx	43	y	n	n	y	y	y	n	
P20599	perform PA8137	1481	polyacrylamide, petrol distil 30%-drainage aid	retention aid	2/1/0	x			3476	y	n	n	y	y	n	n	
P20600	elcoment violet	3259	organic pigment-30%		2/1/0	x			268	y	n	y	y	n	n	n	
P20601	elcoment blue	3257	pigment, copper 3 % copper compounds 20%		2/1/0	x			1355	y	n	y	y	n	n	n	
P20602	elcoment black	3256	pigment, diethylene glycol 111-46-4 5%, carbon black 34%		2/1/0	x			152	y	n	n	n	n	n	n	
P20610	sodium bicarbonate	3272	sodium bicarbonate	144-55-8	0/0/0	x			463	n	n	n	n	n	n	n	
P20615	kymene 821	3285	1,3 dichloropropanol-96-23-1	amine polymer	2/0/0	x			16737	y	n	n	y	y	n	n	
P20620	tronox r-pl tio2	3306	al2o3 13463-67-7 90%,alo2 1344-28-1 5%,alpo4-5%	powder	1/1/0			xxxxx	60935	y	n	n	y	n	n	n	
P20632	hycar 26469 emulsion	2857	polymer emulsion	trial	1/0/0		x		354	y	n	n	n	n	n	n	
P20634	hydrasperse 90 powder	3322	Kaolin-100%	1332-58-7	1/0/0			xxxxx	19634	y	n	n	n	n		n	
P20635	pergasol brown f2	3348	colorant-urea 1-2%	dye	0/1/0	x			1061	n	n	n	n	n	n	n	
P20636	carbobond 26373	2723	acrylic polymer emulsion	trial	0/0/0		x		30867	n	n	n	n	n	n	n	
P20638	halopont blue rnd	3358	glycerin 1-5%. PG 1%	dye	1/1/0	x			229	y	n	n	y	n	n	n	
P20643	celvolit dm1831e	3392	vinyl acetate copolymer, vinyl acetate 108-05-4 0.2%	trial	1/0/0			xxxx	41457	y	n	y	y	y	n	n	
P20645	perform sp7200	3284	petrol distil 64742-47-8 32%, ethox alcohol c12-16 <2%	retention aid -acrylamide copolymer	2/1/0	x			8064	y	n	n	y	y	n	n	
P20647	fennosil 515	3363	silicone dioxide solution 7631 -86-9		1/0/0	x			1977	y	n	n	y	n	n	n	
P20650	vycar 450X61	3449	vinyl chloride copolymer		1/0/0			x	9330	y	n	n	n	n	n	n	
P20651	vycar 460x49	2631	vinyl chloride copolymer		1/1/0			x	26193	y	n	n	n	n	n	n	
P20652	vycar 460x95	3374	vinyl chloride copolymer	trial	1/0/0			x	8817	y	n	n	y	n	n	n	
P20657	nalco 63001	3381	lab only	trial	1/1/0		x		168	n	n	n	n	n	n	n	
P20660	ultraphase size agent	3385	rosin size	aluminum sulfate 10043-01-3 3-4%	1/0/0	x			1727	y	n	n	y	n	n	n	
P70249	defoamer fd-62k	86	defoamer	emulsion in water	0/0/0		x		6048	n	n	n	n	n	n	n	
P78000	webcam fcl	1315	sodium hydroxide solution 5-15	inactive	3/0/0	x			51110	n	n	n	y	y	n	n	
P78002	foamkill 639q	454	organo silicone	bp 480F <1% volatile	1/1/0		x		4830	n	n	n	y	n	n	n	bp 480 F

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Processed Raw Materials used in 2009

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	trial	2/1/0	x			3436	y	n	n	y	y	n	n	
P78019	Webco	3355	naoh 5-15%	cleaning compound	3/0/0	x			39712	n	n	n	n	n	n	n	

Notes:
Unused materials dropped at 0-5 lbs along with calculation
Lab trial dropped at 500 or less
Material no longer in use since mid 2009 are excluded

PM-papermachine
WE-wet end
CTR-coater
DE-size press or dry end

Monadnock Paper Mills
Bennington, NH

Table 2
6/14/2011

Processed Raw Materials used in the PM1 and PM2 Wet End

2008

Mat'l Code	MSDS #	Name	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20044	1190	HERCON 70 (12.5%)	alkyl ketene dimer emulsion	sizing agent	1/0/0	x			40250	n	n	n	n	n	n	n	
P20045	717	ALUM, ALUMINUM SULFATE (49%)	aluminum sulfate	17927-65-0-liquid	1/0/0	x			276091	y	n	n	y	n	n	n	
P20046	2168/2183	SODIUM ALUMINATE-38-45 %	sodium aluminate-38%-1302-42-7	naoh solution	3/0/2	x			7246	y	n	n	y	y	n	n	
P20047	1211/1068	SODA ASH LIGHT	sodium carbonate	497-19-8	1/0/0	x			82282	y	n	n	n	n	n	n	
P20051	1547	LEVOGEN PM DYE FIXATIVE	polyhydroximide 50-60 %		1/1/0	x			22028	y	n	n	y	n	n	n	
P20052	873	PALE FLUID PEXOL 50 SIZE (50%)	rosin sizing agent	aqueous soln	1/1/0	x			9357	n	n	n	n	n	n	n	sol
P20057	1077	PLASMINE PLH 50 SIZE (50%)	rosin sizing agent	trace ammonia <1 %	1/0/0	x			126082	y	n	n	y	n	n	n	
P20058	1657	DETAC DC3970	stickies control	WB detackifyer	1/0/0	x			33736	n	n	n	n	n	n	n	
P20059	1505	DARA-SPRAY FP5500	stickies control	polymer	0/0/0	x			3910	n	n	n	n	n	n	n	
P20060	243	OMYAFIL 72%	round limestone-calcium carbonate	1317-65-3	0/0/0	x	x		2629693	y	n	n	y	n	n	n	no sol
P20065	569	HIBRITE CLAY SLURRY	clay slurry-kaolin	0.-2.5 % tio2	0/0/0	x			62491	y	n	n	y	n	n	n	no sol
P20066		REGULAR CLAY FILLER SLURRY	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x			357405	y	n	n	n	n	n	n	no sol
P20068	1314	MISTRON VAPOR TALC	talc-magnesium silicate 14807-96-6 99%		1/0/0	x			136063	y	n	n	n	n	n	n	
P20070	609	ANSILEX 93 CLAY	clay-kaolin--aluminum silcate powder	0.4-2%-tio2	0/0/0	x			397923	y	n	n	n	y		n	not sol
P20072	722	HYDRAD C (HYDRATED ALUMINIA)	al2O3 slurry	1344-28-1	0/1/0	x			30800	y	n	n	y	n		n	not sol
P20111	2383	INTRABOND LIQUID YELLOW 5GA	triethanolamine 10 %	dye	2/1/0	x			1233	y	n	n	y	n	n	n	
P20121	1361	SUPRA BLUE RB PONOLITH LIQUID	trace cu, formaldehyde	pigment	0/1/0	x			4433	n	n	n	n	n	n	n	
P20123	449	CAUSTIC SODA FLAKES	sodium hydroxide-solid		3/0/1				4214	y	n	n	y	n	n	n	
P20118	173	SOLUBLE AMERICAN BLUE DYE														n	
P20127	511	PONT FAST RED 8 BLX DRY		pigment	0/1/0	x			86	n	n	n	n	n	n	n	
P20129	3077	HALOPONT BLUE RNM LIQUID DYE	56-81-5 glycerine 2%,	pigment	1/1/0	x			348	y	n	n	y	n	n	n	
P20130	637	LEUCOPHOR B-302 OPTICAL BRIGHT	stilbenen brightener	dye	1/1/0	x			143	y	n	n	n	n	n	n	
P20124	2116	TPX16-239 (25%)														n	
P20132	1411	BOND YELLOW 3B POWDER DYE	lioh 2.1 % 1310-66-3	dye	2/1/1	x			7	y	n	n	y	n	n	n	
P20133	1842	SUPRA YELLOW RD PONOLITH LIQUID	azo dye with trace metals	dye	0/1/1	x			36	n	n	n	n	n	n	n	
P20134		5G BRILLIANT YELLOW DRY DYE	naoh 2%, lead 2.94%	dye	1/1/1	x			88	y	n	n	y	n	n	n	
P20135	389	BAYFERROX YELLOW 1420M IRON OX	iron oxide	pigment	0/0/0	x			223	n	n	n	n	n	n	n	
P20136	1364	SUPRA YELLOW GY PONOLITH LIQUI	Ni 0.87% 7440-02-0	pigment	1/1/0	x			1115	y	n	n	y	y	n	n	
P20139	1638	PONT FAST SCARLET 4B LIQUID DY	azo dye	Co 1.24ppm	0/1/0	x			12153	n	n	n	n	n	n	n	
P20140	1723	PONOLITH SUPRA BLACK LIQUID DYE	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm		1/1/0	x			2373	y	n	n	y	y	n	n	
P20142	388	BAYFERROX RED 120M IRON OXIDE	iron ox, sio2	pigment	1/0/0	x			37	y	n	n	n	y	n	n	
P20143	1587	RUTILE TITANIUM DIOXIDE (BAGS)	tio2 powder		0/0/0	x			70255	y	n	n	y	y	n	n	
P20145	739	HYDROCARB 90	calcium carbonate		1/0/0	x		x	724581	y	n	n	y	n	n	n	
P20176	514	PONTAMINE BLACK SP LIQUID	nickel,cobalt, urea	dye	0/1/0	x			10659	n	n	n	y	n	n	n	
P20289	739	HYDROCARB 60 (CAL. CARBONATE)	calcium carbonate		1/0/0	x		x	179279	y	n	n	n	n	n	n	
P20320	1776	CR SPZ MOLECULAR FIBER	aluminum silicate powder		1/0/0	x			25900	y	n	n	n	n	n	n	
P20355	1587	ANATASE TITANIUM DIOXIDE (BAGS)	tio2 powder		0/0/0	x			718065	n	n	n	n	n	n	n	
P20415	2710	ALBACAR HO PCC	calcium carbonate slurry		0/0/0	x			20713	y	n	n	y	n	n	n	
P20416	2585	leucophor fts liquid	stilbene flourescent	colorant	1/10	x		x	1257	n	n	n	n	n	n	n	
P20421	2885	hydrol 710 ath	aluminum trihydroxide slurry		1/1/0	x			216075	y	n	n	y	n	n	n	
P20443	516	pontamine yellow GX powder	yellow 11		0/1/0	x			526	n	n	n	n	n	n	n	
P20458	2710	albacar HO Pcc Slurry	calcium carbonate slurry		0/0/0	x			1005612	y	n	n	y	n	n	n	
P20461	2920	5152 anionic dry strength	polymer solution		1/0/0	x			5260	n	n	n	n	n	n	n	
P20462	2923	ponolith red wc	1-2% ammonium hydroxide 1336-21-6	pigment	2/1/0	x			1885	y	n	y	y	n	n	n	
P20466	1511	pontamine bril blue a liquid dye	lead 4.3 ppm,cu 1%	pigment	0/1/0	x			7701	n	n	n	n	n	n	n	
P20467	2954	pontamine brilliant violet 6b liquid 50	pigment		0/1/0	x			1499	n	n	n	n	n	n	n	
P20468	152	STA-LOK 400 CATIONIC STARCH	starch		1/0/0	x			5584	y	n	n	n	n	n	n	
P20505	1498	1/4 X 6 dbf BRT TYPE 66 NYLON	fiber nylon		0/0/0	x			700	n	n	n	n	n	n	n	
P20507	2943	kymene 621	1,3 dichloropropanol 96-23-1 -1 %	wet strengthresin	2/0/0	x			120761	y	n	n	y	n	n	n	
P20523	2965	pontamine bond yellow 303	dye		0/1/0	x			6071	n	n	n	n	n	n	n	
P20530	3083	blankophor p150-us	stilbene dye		0/1/0	x			35016	n	n	n	n	n	n	n	
P20590	3249	elcofix lf	resin solution with 8% ethylene glycol 11-46-6	trial	2/1/0	x			48351	y	y	y	y	y	n	n	
P20591	3250	elcoment red RP	ammonia 0.4 % 7664-41-7		1/1/0	x			48351	y	n	n	y	n	n	n	
P20592	3251	elcoment red nr	aqueous pigment		1/1/0	x			878	n	n	n	n	n	n	n	
P20593	3252	elcoment yellow pnb	aqueous pigment		1/1/0	x			6989	n	n	n	n	n	n	n	
P20594	3253	elcoment yellow yp	aqueous pigment		1/1/0	x			1199	n	n	n	n	n	n	n	
P20595	3254	elcoment red GP	aqueous pigment		1/1/0	x			536	n	n	n	n	n	n	n	
P20599	1481	perform PA8137	polyacrylamide, petrol distil 30%-drainage aid	retention aid	2/1/0	x			3476	y	n	n	y	y	n	n	

Monadnock Paper Mills
Bennington, NH

Table 2
6/14/2011

Processed Raw Materials used in the PM1 and PM2 Wet End 2008

Mat'l Code	MSDS #	Name	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20600	3259	elcoment violet	organic pigment-30%		2/1/0	x			268	y	n	y	y	n	n	n	
P20601	3257	elcoment blue	pigment, copper 3 % copper compounds 20%		2/1/0	x			1355	y	n	y	y	n	n	n	
P20602	3256	elcoment black	pigment, diethylene glycol 111-46-4 5%, carbon black 34%		2/1/0	x			152	y	n	n	n	n	n	n	
P20610	3272	sodium bicarbonate	sodium bicarbonate	144-55-8	0/0/0	x			463	n	n	n	n	n	n	n	
P20615	3285	kymene 821	1,3 dichloropropanol-96-23-1	amine polymer	2/0/0	x			16737	y	n	n	y	y	n	n	
P20635	3348	pergasol brown f2	colorant-urea 1-2%	dye	0/1/0	x			1061	n	n	n	n	n	n	n	
P20638	3358	halopont blue rnd	glycerin 1-5%. PG 1%	dye	1/1/0	x			229	y	n	n	y	n	n	n	
P20645	3284	perform sp7200	petrol distil 64742-47-8 32%, ethox alcohol c12-16 <2%	retention aid -acrylamide copolymer	2/1/0	x			8064	y	n	n	y	y	n	n	
P20647	3363	fennosil 515	silicone dioxide solution 7631 -86-9		1/0/0	x			1977	y	n	n	y	n	n	n	
P20660	3385	ultraphase size agent	rosin size	aluminum sulfate 10043-01-3 3-4%	1/0/0	x			1727	y	n	n	y	n	n	n	
P78000	1315	webcam fcl	sodium hydroxide solution 5-15	inactive	3/0/0	x			51110	n	n	n	y	y	n	n	
P78017	3351	prestige fc8744	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	trial	2/1/0	x			3436	y	n	n	y	y	n	n	
P78019	3355	Webco	naoh 5-15%	cleaning compound	3/0/0	x			39712	n	n	n	n	n	n	n	
P20175	2014	NALKAT 7655 (65%)	polyquarternary ammonium chloride in water	process aid	0/1/0	xxxx			1341	n	n	n	n	n	n	n	
P20092	1260	PONT. BLUE SP LIQUID DYE	lead 2.7 ppm,nickel 2.33 ppm	dye	0/1/0	xxxx			193	n	n	n	n	n	n	n	

Notes:

Unused materials dropped at 0-5 lbs along with calculation
Lab trial dropped at 500 or less
Material no longer in use since mid 2009 are excluded

PM-papermachine
WE-wet end

CTR-coater

DE-size press or dry end

Monadnock Paper Mills
Bennington, NH

Table 3
6/14/2011
revised 7/7/2012

Emissions from Raw Materials used in the PM1 and PM2 Wet End 2008

Mat'l Code	Name	MSDS No.	HMIS	Potential Volatile Organic and Inorganic Compounds	CAS	Wt %	Usage-lbs	WW Fraction	WE Emission-lbs
P20057	PLASMINE PLH 50 SIZE (50%)	1077	1/0/0	ammonia	7664-41-7	0.5	126082	0.98	15.76
P20111	INTRABOND LIQUID YELLOW 5GA	2383	2/1/0	triethanolamine	102-71-6	10	1233	1.00	0.00
P20092	PONT. BLUE SP LIQUID DYE	1260	0/1/0	formaldehyde	50-00-0	0.00025	193	na	0.00045
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	0/1/0	formaldehyde	50-00-0	0.00025	433	na	0.00102
P20129	HALOPONT BLUE RNM LIQUID DYE	3077	1/1/0	glycerine	56-81-5	2	348	1.00	0.00
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	1/1/0	diethylene glycol	111-46-6	5	2373	1.00	0.00
				C12-16 ethoxylated alcohols	68551-12-2	2		1.00	0.00
P20176	PONTAMINE BLACK SP LIQUID dye	514	0/1/0	urea estimated content	57-13-6	2	10659	1.00	0.00
P20462	ponolith red wc	2923	2/1/0	ammonium hydroxide (1.5%) as ammonia	1336-21-6	0.73	1885	0.98	0.34
P20507	kymene 621 resin	2943	2/0/0	1,3 dichloropropanol	96-23-1	1	120761	1.00	0.00
P20583	hycar 26879 (all usage assume at wet end)	3225	1/1/0	formaldehyde	50-00-0	.001	797738	na	7.48
P20590	elcofix lf resin	3249	2/1/0	ethylene glycol	111-46-6	8	48351	1.00	0.00
P20591	elcoment red RP	3250	1/1/0	ammonia	7664-41-7	0.4	48351	0.98	4.84
P20599	perform PA8137 retention aid	1481	2/1/0	petroleum distillates	64742-47-8	30	3476	0.74	271.12
P20602	elcoment black	3256	2/1/0	diethylene glycol	111-46-4	5	152	1.00	0.00
P20615	kymene 821 resin	3285	2/0/0	1,3 dichloropropanol	96-23-1		16737	1.00	0.00
P20635	pergasol brown f2	3348	0/1/0	urea	57-13-6	1.5	1061	1.00	0.00
P20638	halopont blue rnd	3358	1/1/0	glycerine	56-81-5	3	229	1.00	0.00
				propylene glycol	57-55-6	1		1.00	0.00
P20645	perform sp7200 retention aid	3284	2/1/0	petroleum distillates	64742-47-8	32	8064	0.74	670.93
				C12-16 ethoxylated alcohols	68551-12-2	1		1.00	0.00
P78017	prestige fc8744-felt wash	3351	2/1/0	polyhydroxyalkylene dimethylammoniumchloride	25988-97-0	20	3436	1.00	0.00
				amylase 7-13%	9000-90-2	10		1.00	0.00
				C12-14 ethoxylated alcohols	68439-50-9	10		1.00	0.00
				formaldehyde	50-00-0	0.0009		na	0.03
				sodium lauryl sulfate	151-21-3	3		1.00	0.00

materials with potential formaldehyde per evaluation
Hycar is assumed to be applied 100% to WE

Summary:

Emissions from PM Wet End	CAS	lbs
petroleum distillates	64742-47-8	**942**
ammonia	7664-41-7	**21**
formaldehyde	50-00-0	**Refer to Formaldehyde Emissions Summary**
		963

Basis:

WE operates at 100 F
WE emissions are evaporated off by drier section
WE emissions primarily found in WE stack
Dryer operates at 250 F
% of white water (WW) entering dryer is 0.98
Chemicals solid at room temperature stay in sheet or white water
Chemicals with boiling points above 250 F leave the sheet in the dryer
Ammonia equivalent content in water solution-% 0.73
Lab trial dropped at 500 lbs or less
HCl is assumed to be neutralized in the white water and not emitted
Polymers stay with the sheet or in the white water
Formaldehyde emission is resin wt x %FF/100 x 0.0009
All glycols are similar
Naphthalene is similar to petroleum distillates
Methanol is similar to ammonia

NCASI data at 130F :

Acetaldehyde fraction in white water emitted-% 0.0
Methanol fraction in white water emitted-% 0.0
Phenol fraction in white water emitted-% 0.0
MEK fraction in white water emitted-% 0.0
1,2 methoxyethane fraction in white water emitted-% 0.0
2 butoxyethanol fraction in white water emitted-% 0.0
Ethylene glycol fraction in white water emitted-% 0.0
Napthalene fraction in white water emitted-% 0.0
Methylene chloride fraction in white water emitted-% 0.0

Properties:

Compound	*RT phase*	*BP-F*	*VP-mm Hg*	*Sol in H2O*	*WE Fraction in White Water*	*Comment*
glycerine	*liquid*	*554*	*neg*	*high*	*1.000*	
formaldehyde	*gas*	*gas*	*high*	*high*	*see test data*	
ammonia	*gas*	*gas*	*high*	*high*	*0.975*	*like methanol*
vinyl acetate	*liquid*	*163*	*high*	*insol*	*0.000*	
disodiumisodecyl sulfosuccinate mw 402	*solid*	*high*	*neg*	*nd*	*1.000*	
monoammonium salt, sulfamic acid	*solid*	*320.00*	*neg*	*high*	*1.000*	
sulfamic acid	*solid*	*400 decomp*	*neg*	*high*	*1.000*	
styrene	*liquid*	*293.00*	*low*	*insol*	*1.000*	
ethyleneglycol	*liquid*	*388.00*	*low*	*high*	*1.000*	*a glycol*
nonylphenylethoxylate	*liquid*	*>200*	*neg*	*high*	*1.000*	
ammonium chloride	*solid*	*720.00*	*neg*	*high*	*1.000*	
alkylpolyglycolether	*solid*	*very high*	*neg*	*high*	*1.000*	
dodecylbenzenesulfonic acid	*liquid*	*600 decomp*	*neg*	*high*	*1.000*	
urea	*solid*	*270 decomp*	*neg*	*high*	*1.000*	
triethanolamine	*liquid*	*671 decom*	*neg*	*high*	*1.000*	
triethanolamine hydrochloride	*solid*	*350 decomp*	*neg*	*nd*	*1.000*	
organo silicone	*liquid*	*480.00*	*neg*	*none*	*1.000*	
HCL	*gas*	*gas*	*high*	*some*	*1.000*	*neutralized in WW*
petroleum distillates	*liquid*	*400*	*moderate*	*none*	*0.740*	*like napthalene*
diethylene glycol	*liquid*	*470*	*1.00*	*high*	*1.000*	*a glycol*
C12-16 ethoxylated alcohols	*solid*	*high*	*neg*	*high*	*1.000*	*high bp alcohol*
1,3 dichloropropanol	*liquid*	*302*	*7.00*	*slightly*	*1.000*	*high bp alcohol*
propylene glycol	*liquid*	*369*	*low*	*moderate*	*1.000*	*a glycol*
polyhydroxyalkylene dimethylammoniumchloride-copolymer	*liquid*	*high*	*low*	*sol*	*1.000*	
amylase 7-13%	*solid*	*high*	*neg*	*sol*	*1.000*	
C12-14 ethoxylated alcohols	*liquid*	*high*	*neg*	*high*	*1.000*	*high bp alcohol*
sodium lauryl sulfate	*solid*	*high*	*neg*	*sol*	*1.000*	

Monadnock Paper Mills
Bennington, NH

Table 4
6/14/2011

Raw Materials used in the PM1 and PM2 Dry End or Size Press during 2008

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20056	AEROSOL 501 SURFACTANT	405	disodiumisodecyl/sulfosuccinate	surfactant 37294-49-8	1/1/0		x		2755	n	n	n	y	n	n	n	sol
P20060	OMYAFIL 72%	243	round limestone-calcium carbonate	1317-65-3	0/0/0	x	x		2629693	y	n	n	y	n	n	n	no sol
P20073	PYROLUX 585D	2993	ammonium sulfamate/sulfamic acid	fire retardant	2/1/0		x		7532	y	n	n	y	n	n	n	
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA		0/0/0		x		66909	n	n	n	n	n	n	n	sol.prop 6 warning
P20076	SCRIPSET 520 RESIN	658	styrene maleic anhydride polymer, 0.85% styrene	32959-78-1 powder	1/0/0		x		17729	y	n	y	n	y	y	n	0.1 %demin
P20079	AURALUBE 243 LIQUID EMULSION	1329	EG 1-5% 107-21-1,nonylphenylethoxylate 5-10% 127087-87-0	polyetylene emulsion	2/1/0		x		21539	y	n	y	y	n	n	n	
P20084	A-25 CATALYST (25%)	1331	ammonium chloride 25% 12125-02-9		2/1/0		x		6650	y	n	n	y	n	n	n	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant		1/1/0		x		34200	n	n	n	n	n	n	n	
P20086	AURALUBE MPW II WAX (35%)	1330	alkylpolyglycolether 5-10% 9004-98-2,1-5% dodecylbenzenesulfonic acid 27176-87-0-lubricant		2/1/0		x		783	y	n	n	y	n	n	n	
P20087	AQUA AMMONIA 26	728	ammonium hydroxide 30%	7664-41-7	3/1/0		x	x	30391	y	y	y	y	y	y	n	sol in h2o
P20091	PONTAMINE BRILLIANT VIOLET BRW	1943	urea 10-20 %-57-13-5,triethanol amnine 102-71-6 <5%,triethanolamine hydrochloride 637-39-8 <5%	dye	1/1/1		x		511	n	n	n	n	n	n	n	
P20182	25-2819 LATEX	3057	cross linking agent	vinyl acetate 0.6 %	1/0/0		x		10780	y	n	y	y	n	n	n	check VAM
P20286	HYCAR 26707 LATEX (60%)	2165	acrylic polymer emulsion		1/0/0		x		1515486	n	n	n	n	n	n	n	
P20316	GLYCERINE	1035	vegetable derived		2/1/0		x	x	11992	y	n	n	y	y	n	n	
P20390	Blankophor UW Liquid	3076	whitener agent, urea 15-30%		1/1/0		x		322505	y	n	n	y	n	n	n	
P20422	hycar 26391	3082	acrylic emulsion	chloromethylisothiazolidone <0.1 %	2/1/0		x		25708	y	n	n	y	n	n	n	
P20510	penford 280	566	corn starch		0/1/0		x		1100487	y	n	n	n	n	n	n	
P20528	PENFORD GUM 280 - BAGS	566	corn starch		0/1/0		x		70372	y	n	n	n	n	n	n	
P20583	hycar 26879	3225	acrylic polymer emulsion	trial	1/1/0		x	x	797738	n	n	n	n	n	n	n	5 % to coater-negl
P20636	carbobond 26373	2723	acrylic polymer emulsion	trial	0/0/0		x		30867	n	n	n	n	n	n	n	
P70249	defoamer fd-62k	86	defoamer	emulsion in water	0/0/0		x		6048	n	n	n	n	n	n	n	
P78002	foamkill 639q	454	organo silicone	bp 480F <1% volatile	1/1/0		x		4830	n	n	n	y	n	n	n	bp 480 F
P20081	POLYGRAPHICS C	1501	polyurethane solution		1/1/0		x		6726		n	n	n	n	n	n	n
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	chloromethylisothiozolinone 55965-84-9-0.1 %	1/1/0		x		464011	y	y	n	n	y	n	n	n
P20099	PONTAMINE FAST TURQUOISE 8GLP LIQUID	370	copper 2 %	triethanolamine 102-71-6 10-15%	1/1/0		x		161	y	y	n	n	y	n	n	n
P20445	Polygraphix bmp	2519	styrene acrylate copolymer dispersion		0/1/0		x		59756	y	n	n	n	n	n	n	n
P20582	bersize 6409	3226	sizing agent	formaldehyde 0.113 %	2/1/0		x		24057	y	y	y	y	y	y	n	chk formalehyde

Notes:

Unused materials dropped at 0-5 lbs along with calculation
Lab trial dropped at 500 or less
Material no longer in use since mid 2009 are excluded

PM-papermachine
WE-wet end
CTR-coater
DE-size press or dry end

Monadnock Paper Mills
Bennington, NH

Table 5
6/14/2011
Revised 7/7/12

Emissions from Raw Materials used in the PM1 and PM2 Dry End or Size Press during **2008**

Mat'l Code	Name	MSDS No.	HMIS	Potential Volatile Organic and Inorganic Compounds	CAS	Wt %	Usage-lbs	WW Fraction	WE Emission-lbs
P20056	AEROSOL 501 SURFACTANT	405	1/1/0	disodiumisodecyl sulfosuccinate <36%	37294-49-8	36	2755	1	0
P20073	PYROLUX 585D fire retardant	2993	2/1/0	monoammonium salt, sulfamic acid	7773-06-0	55	7532	1	0
				sulfamic acid	5329-14-6	5		1	0
P20075	LATEX 25-1846 (52%)	326	0/0/0	formaldehyde	50-50-0	0.0039	66909	na	0.160
P20076	SCRIPSET 520 RESIN-styrene copolymer	658	1/1/0	styrene	100-42-5	0.5	17729	1	0
P20079	AURALUBE 243 LIQUID EMULSION	1329	2/1/0	ethyleneglycol	107-21-1	3	21539	1	0
				nonylphenylethoxylate 5-10%	127087-87-0	7.5		1	0
P20084	A-25 CATALYST (25%)	1331	2/1/0	ammonium chloride	12125-02-9	25	6650	1	0
P20085	SUNSIZE 4133 (25%)	1942	1/1/0	formaldehyde	50-00-0	0.06	34200	na	1.26
P20086	AURALUBE MPW II WAX (35%)	1330	2/1/0	alkylpolyglycolether	9004-98-2	7.5	783	1	0
				dodecylbenzenesulfonic acid	27176-87-0	3		1	0
P20087	AQUA AMMONIA 26	728	3/1/0	ammonia from ammonium hydroxide (1336-21-6) at 30 %	7664-41-7	30	28871	0	4209
P20091	PONTAMINE BRILLIANT VIOLET BRW	1943	1/1/1	urea	57-13-5	15	511	1	0
				triethanol amine	102-71-6	2.5		1	0
				triethanolamine hydrochloride	637-39-8	2.5		1	0
P20182	25-2819 LATEX Xlink	3057	1/0/0	vinyl acetate	108-05-4	0.6	10780	0	65
				formaldehyde	50-00-0	0.00025		na	0.00165
P20316	GLYCERINE	1035	2/1/0	glycerine	56-81-5	100	11992	1	0
P20390	Blankophor UW Liquid	3076	1/1/0	urea	57-13-5	22.5	322505	1	0
P20422	Hycar 26391	3082		formaldehyde	50-00-0	0.039	25708	na	0.615
P20582	Bersize 6409 sizing agent	3226	2/1/0	formaldehyde	50-00-0	0.113	24057	na	1.67
p20636	Carbobond 26373	2723		formaldehyde	50-00-0	0.045	30867	na	0.851
P78002	foamkill 639q	454	1/1/0	organo silicone	VOC	1	4830	1	0
P20097	HYCAR 26717 LATEX (43%) acrylic polymer	2097	1/1/0	chloromethylisothiozolinone	26172-55-4	0.1	464011	1	0
P20099	PONTAMINE FAST TURQUOISE 8GLP LIQUID	370	1/1/0	triethanolamine	102-71-6	12.5	161	1	0.0
P20582	bersize 6409 sizing agent	3226	2/1/0	formaldehyde	50-00-0	0.113	24057	na	1.67
									4279

materials with potential formaldehyde per evaluation

Summary:

Emissions from Papermachine Dry End	CAS	lbs
formaldehyde	50-00-0	Refer to formaldehyde emissions summary
ammonia	7664-41-7	4209
vinyl acetate	108-05-4	65
		4274

Basis:

Size press operates at 180-230 F
Sheet temperature at 160 F
Chemicals solid at room temperature stay in sheet
Chemicals with boiling points above 160 F leave the sheet

Ammonia equivalent content in water solution-%	48.6
Lab trial dropped at 500 lbs or less	
Ammonia % usage of facility total	93
Ammonium hydroxide facility usage-lbs	30391
Formaldehyde emission is restn wt x % FF/100 x	0.0613

Properties:

Compound	*RT phase*	*BP-F*	*VP-mm Hg*	*Sol in H2O*	*DE Fraction in Sheet*
glycerine	*liquid*	*554*	*neg*	*high*	*1*
formaldehyde	*gas*	*gas*	*high*	*high*	*see test data*
ammonia	*gas*	*gas*	*high*	*high*	*0*
vinyl acetate	*liquid*	*163*	*high*	*insol*	*0*
disodiumisodecyl sulfosuccinate mw 402	*solid*	*high*	*neg*	*nd*	*1*
monoammonium salt, sulfamic acid	*solid*	*320.00*	*neg*	*high*	*1*
sulfamic acid	*solid*	*400 decomp*	*neg*	*high*	*1*
styrene	*liquid*	*293.00*	*low*	*insol*	*1*
ethyleneglycol	*liquid*	*388.00*	*low*	*high*	*1*
nonylphenylethoxylate	*liquid*	*>200*	*neg*	*high*	*1*
ammonium chloride	*solid*	*720.00*	*neg*	*high*	*1*
alkylpolyglycolether	*solid*	*very high*	*neg*	*high*	*1*
dodecylbenzenesulfonic acid	*liquid*	*600 decomp*	*neg*	*high*	*1*
urea	*solid*	*270 decomp*	*neg*	*high*	*1*
triethanolamine	*liquid*	*671 decom*	*neg*	*high*	*1*
triethanolamine hydrochloride	*solid*	*350 decomp*	*neg*	*nd*	*1*
organo silicone	*liquid*	*480.00*	*neg*	*none*	*1*
chloromethylisothiozolinone	*liquid*	*392*	*low*	*high*	*1*

Monadnock Paper Mills
Bennington, NH

Table 6
6/14/2011
Revised 7/6/12

Raw Materials used on the Coater during 2008

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20061	CARBOSET GA-1926 POLYMER (40%)	1688	acrylic polymer		1/0/0			x	68	n	n	n	n	n	n	n	
P20063	X-2111 CLAY (DRY, BAGS)	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x		x	10800	y	n	n	n	n	n	n	no sol
P20087	AQUA AMMONIA 26	728	ammonium hydroxide 30%	7664-41-7	3/1/0		x	x	30391	y	y	y	y	y	y	n	sol in h2o
P20145	HYDROCARB 90	739	calcium carbonate		1/0/0	x		x	724581	y	n	n	y	n	n	n	
P20149	alcosperse 149	745	sodium polyacrylate in water	acrylic acid	1/0/0			x	5216.09	y	n	y	y	n	n	n	tri acrylic acid
P20150	ISOPROPYL ALCOHOL 99%	667	isopropyl alc 99%	67-63-0	2/3/0			x	1183	y	n	n	y	n	y	n	
P20155	ACRONAL S 504	2373	acrylate polymer dispersion		1/1/0			x	320548	n	n	n	n	n	n	n	
P20158	VYCARTIN 842-30 LATEX	2369	vinylchloride copolymer		1/0/0			x	1225.1	n	n	n	n	n	n	n	
P20162	ropaque HP1055	1874	styrene acrylic copolymer	ammonia 0.1 %	1/0/0			x	821	y	n	n	y	n	n	n	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion		1/0/0			x	29589	y	n	n	n	n	n	n	
P20289	HYDROCARB 60 (CAL. CARBONATE)	739	calcium carbonate		1/0/0	x		x	179279	y	n	n	n	n	n	n	
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer		1/0/0			x	4534	n	n	n	n	n	n	n	
P20316	GLYCERINE	1035	vegetable derived		2/1/0		x	x	11992	y	n	n	y	y	n	n	
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	lab use	1/0/0			x	2710	n	n	n	n	n	n	n	
P20326	innofix 240	2739	cationic polymer solution		1/0/0			x	3241	n	n	n	n	n	n	n	
P20348	albacar W-5970	1991	calcium carbonate 471-34-1		0/0/0			x	2325	y	n	n	n	n	n	n	
P20350	PARAGUM 109	2562	thickener		1/1/0			x	73262	n	n	n	n	n	n	n	
P20352	HYDREWX P	2270	sodium magnesiom aluminosilicate		1/0/0			x	41	y	n	n	n	n	n	n	
P20401	PROPYLENE GLYCOL	2244	propylene glycol 100%-57-55-6		0/1/0			x	21389	n	n	n	n	n	n	n	
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer		0/0/0			x	327	n	n	n	n	n	n	n	
P20416	leucophor fts liquid	2585	stilbene flourescent	colorant	1/10	x		x	1257	n	n	n	n	n	n	n	
P20428	pluronic L-61	2764	polyglycol 9003-11-6	surfactant	1/1/0			x	9688	n	n	n	n	n	n	n	
P20511	etacryl 306	2951	acrylic copolymer		1/0/0			x	690	n	n	n	n	n	n	n	
P20567	Covercarb HP	739	calcium carbonate		1/0/0			x	11123	y	n	n	n	n	n	n	
P20568	Airflex 100 HS	2668	vinylacetate copolymer	<0.5% vinyl acetate monomer	1/0/0			x	89871	n	n	y	n	n	n	n	
P20569	ultra gloss 90	3168	aluminum silicate powder or kaolin	trial	0/0/0			x	17565	y	n	n	n	y	n	n	
P20570	ultra white 90	3169	Kaolin, sio3	trial	0/0/0			x	5180	y	n	n	n	n	n	n	
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	trial	1/0/0			x	1700	n	n	n	n	n	n	n	
P20576	chemcor emulsion	3178	ethen homopolymer emulsion	trial	1/0/0			x	140	n	n	n	n	n	n	n	
P20587	aluminum chloride															n	
P20650	vycar 450X61	3449	vinyl chloride copolymer		1/0/0			x	9330	y	n	n	n	n	n	n	
P20651	vycar 460x49	2631	vinyl chloride copolymer		1/1/0			x	26193	y	n	n	n	n	n	n	
P20652	vycar 460x95	3374	vinyl chloride copolymer	trial	1/0/0			x	8817	y	n	n	y	n	n	n	
P20620	tronox r-pl tio2	3306	al2o3 13463-67-7 90%,alo2 1344-28-1 5%,alpo4-5%	powder	1/1/0			x	60935	y	n	n	y	n	n	n	
P20634	hydrasperse 90 powder	3322	Kaolin-100%	1332-58-7	1/0/0			x	19634	y	n	n	n	n		n	
P20643	celvolit dm1831e	3392	vinyl acetate copolymer, vinyl acetate 108-05-4 0.2%	trial	1/0/0			x	41457	y	n	y	y	y	n	n	

Notes:

Unused materials dropped at 0-5 lbs along with calculation *PM-papermachine* *CTR-coater* *DE-size press or dry end*

Lab trial dropped at 500 or less *WE-wet end*

Material no longer in use since mid 2009 are excluded

are materials with formaldehyde per evaluation

Monadnock Paper Mills
Bennington, NH

Table 7
6/14/2011
Revised 7/7/12

Emissions from Raw Materials used in the Coater during 2008

Code	Material	MSDS No.	HMIS	Potential volatile organic and inorganic compounds	CAS	wt %	Usage-lbs	Fraction in Sheet	Emission-lbs
P20087	AQUA AMMONIA 26	728	3/1/0	ammonia from ammonium hydroxide (1336-21-6) at 30 %	7664-41-7	30	30391	0	221.6
P20150	ISOPROPYL ALCOHOL 99%	667	2/3/0	isopropyl alc 99%	67-63-0	100	1183	0	1183
P20162	ropaque HP1055 styrene acrylic copolymer	1874	1/0/0	ammonia	1336-21-6	0.1	821	0	0.8
P20180	VYCAR 460 X 120 EMULSION	2486	1/0/0	formaldehyde	50-00-0	0.0006	10780	0	#REF!
P20290	dur-o-set elite 25-299A	2704	1/0/0	formaldehyde	50-00-0	0.00025	4534	0	#REF!
P20316	GLYCERINE	1035	2/1/0	glycerine	56-81-5	100	11992	1	0.0
P20317	RESYN 25-1151 (51%)	3026	1/0/0	acetaldehyde	75-07-0	0.1	2710	0	2.7
				formaldehyde	50-00-0	0.00025	2710	0	#REF!
P20401	PROPYLENE GLYCOL	2244	0/1/0	propylene glycol	57-55-6	100	21389	see data	1069
P20416	leucophor fts liquid	2585	1/1/0	formaldehyde	50-00-0	0.001	1257	0	#REF!
P20428	pluronic L-61	2764	1/1/0	polyglycol	9003-11-6	100	9688	1	0.0
P20568	Airflex 100 HS vinyl acetate polymer	2668	1/0/0	vinyl acetate	108-05-4	0.5	89871	0	449.4
P20571	hycar 2671	2653	1/0/0	formaldehyde	50-00-0	0.013	1700	0	#REF!
P20643	celvolit dm1831e vinylacetate polymer	3392	1/0/0	vinyl acetate	108-05-4	0.2	41457	0.00	82.9
P20650	vycar 450X61	3449	1/0/0	formaldehyde	50-00-0	0.03	9330	0.00	#REF!
P20651	vycar 460x49	2631	1/1/0	formaldehyde	50-00-0	0.029	26193	0.00	#REF!
P20652	vycar 460x95	3374	1/0/0	formaldehyde	50-00-0	0.03	8817	0.00	#REF!
									#REF!

Summary:

Emissions from Coater	CAS	lbs
isopropyl alc 99%	67-63-0	**1183**
ammonia	7664-41-7	**222**
propylene glycol	57-55-6	**1069**
vinylacetate	108-05-4	**532**
formaldehyde	50-00-0	**Refer to formaldehyde Emissions Summary**
acetaldehyde	75-07-0	**3**
		3010

Basis:

Coater operates at 300 F air temperature
Sheet temperature at 200 F
Chemicals solid at room temperature stay in sheet
Chemicals with boiling points at above 300 F leave the sheet

Ammonia equivalent content in water solution-%	*48.6*
Ammonia % usage of facility total	*5*
Ammonium hydroxide facilty usage-lbs	*30391*
PG emission factor is- lbs used x fraction emitted of	*0.05*

Lab trial dropped at 500 lbs or less

Properties:

compound	*RT phase*	*BP-F*	*VP-mm Hg*	*Sol in H2O*	*CTR Fraction in Sheet*
polyethylene propylene glycol -mw 8400	*solid*	*very high*	*neg*	*high*	*1*
propylene glycol	*liquid*	*369*	*low*	*moderate*	*see data*
glycerine	*liquid*	*554*	*neg*	*high*	*1*
IPA	*liquid*	*180*	*33.00*	*high*	*0*
ammonia	*gas*	*gas*	*high*	*high*	*0*
vinyl acetate	*liquid*	*163*	*high*	*insol*	*0*
formaldehyde	*gas/vapor*	*gas*	*high*	*high*	*seedata*
acetaldehyde	*liquid*	*70*	*high*	*high*	*0*

Monadnock Paper Mills
Bennington, NH

Table 8
6/14/2011
Revised 7/7/12

Emissions from Papermachines and Coater Combined during **2008**

Emissions from PM Wet End	CAS	lbs
petroleum distillates	64742-47-8	942
ammonia	7664-41-7	20.9
formaldehyde	50-00-0	Refer to formaldehyde Emissions Summary
		970

Emissions from Papermachine Dry End	CAS	lbs
formaldehyde	50-00-0	Refer to formaldehyde Emissions Summary
ammonia	7664-41-7	4209
vinyl acetate	108-05-4	65
		4280

Emissions from Coater	CAS	lbs
isopropyl alc 99%	67-63-0	1183
ammonia	7664-41-7	222
propylene glycol	57-55-6	1069
vinylacetate	108-05-4	532
formaldehyde	50-00-0	Refer to formaldehyde Emissions Summary
acetaldehyde	75-07-0	2.71
		3010

Emissions from Process Combined	CAS	lbs
isopropyl alc 99%	67-63-0	1183
ammonia	7664-41-7	4453
propylene glycol	57-55-6	1069
vinyl acetate	108-05-4	597
formaldehyde	50-50-0	Refer to formaldehyde Emissions Summary
petroleum distillates	64742-47-8	942
acetaldehyde	75-07-0	3
		8244

Monadnock Paper Mills
Bennington, NH

Table 10
5/5/2008

Propylene Glycol (PG) Evaporative Emissions

Evaporative Emissions Model

Purpose: Estimate chemical emissions due to evaporation from liquid surfaces.
Method: EPA Evaporization Model
Assumptions:
Area is one side of sheet
Air velocity is bulk average based on ventilation rate above the surface
For solutions, partial pressure is estimated.
For aqueous solutions, Henry's law is used where possible.
Chemicals with partial pressures less than 0.001 mm Hg are ignored.
Without vapor pressure data, ideal solutions are assumed.

EPA Model:

W		vapor release rate, lbhr
W		3600MKAP/RT
M		chemical molecular weight
A		total surface area, ft^2
P		vapor pressure or partial pressure of chemical at T, psia
R	10.73	gas constant, psia-ft^3/R-lb mole
t		liquid temperature, F
T	460	liquid temperature,R
K		gas phase mass transfer coefficient, ft/s
K		0.00438*U^0.78*((D/3.1E-4))^.667
D	0.00108	diffusion coefficient for chemical in air, ft^2/s
d	1	diffusion coefficient for chemical in air, cm^2/s
U		windspeed, miles/h
if no D data:		
K		0.00438*U^0.78*(18/M)^.333

Evaporative Emissions for propyleneglycol

W		vapor release rate, lb/hr
W		3600MKAP/RT
M	76	chemical molecular weight
A	573.75	total surface area, ft^2
P	2.37E-03	vapor pressure or partial pressure of chemical at T, psia
R	10.73	gas constant, psia-ft^3/R-lb mole
t	212	liquid temperature, F
T	672	liquid temperature,R
K		gas phase mass transfer coefficient, ft/s
K		0.00438*U^0.78*(18/M)^.333
D	nd	diffusion coefficient for chemical in air, ft^2/s
d	nd	diffusion coefficient for chemical in air, cm^2/s
U	13.8	windspeed, miles/h
K=	0.021033246	
W=	**1.08E+00**	**lb/hr**

Assumptions for Coater Evaporation Conditions

MC00014WP coating contains:

	wt %	MW	Moles/100 lbs	Mole Fraction
Water	35.87	18	1.99	0.934
Polymer	63.23	500	0.13	0.059
PG	0.8	76	0.0105	0.0049
NH_4OH	0.1	35.05	0.0029	0.001
Total	100		2.13	

Average coating operating conditions:

Counter current air flow				
Oven temperature	310	F	154	C
Oven length	135	ft		
Web width	4.25	ft		
Web speed	800	ft/min	9.1	mph
Area evaporating glycol	573.75	ft2		
Air flow rate from fan	10000	acfm		
Cross section area of oven	24	ft2		
Air velocity	417	ft/min2	4.7	mph
Wind speed over web	13.8	mph		
MW	76			
Coating temp	212	F	100	C
VP at 154 C	220	mmHg		
VP at 100 C	25	mmHg		
Assumed mole fraction	0.0049			
Use coating temperature for VP of evaporation				
Estimated VP of PG soln	0.1225	mmHg	0.00237	psia
Typical coating application rate	3006	lb/hr-wet		
Typical PG application rate	24.0	hr		
Actual PG application rate	125.0	lb/hr		

Conclusion:

Assuming ideal solutions (worst case)

Max average evaporation rate potential	1.08	lb/hr of PG
Typical applied PG rate	24.0	lb/hr
Fraction of PG emitted	**0.05**	**of PG applied**

Monadnock Paper Mills
Bennington, NH

Table 11
5/5/2008

Emissions from two 37 mmbtu/hr Industrial Boilers Using #6 Oil

Pollutant	Emission Factor lb/1000 gal	Emissions lb/yr	Emissons tons/yr	HAP Emissons tons/yr
Benzene	2.14E-04	0.318	0.0002	0.0002
Ethylbenzene	6.36E-05	0.0944	0.0000	0.0000
Formaldehyde	3.30E-02	49.00	0.0245	0.0245
Naphthalene	1.13E-03	1.68	0.0008	0.0008
1,1,1-Trichlorethane	2.36E-04	0.350	0.0002	0.0002
Toluene	6.20E-03	9.21	0.0046	0.0046
o-Xylene	1.09E-04	0.162	0.0001	0.0001
Acenaphthene	2.11E-05	0.0313	0.0000	0.0000
Acenaphthlyene	2.53E-07	0.000376	0.0000	0.0000
Anthracene	1.22E-06	0.001812	0.0000	0.0000
Benz(a)anthracene	4.01E-06	0.005954	0.0000	0.0000
Benzo(b,k)flouranthene	1.48E-06	0.002198	0.0000	0.0000
Benzo(g,h,i)perylene	2.26E-06	0.003356	0.0000	0.0000
Chrysene	2.38E-06	0.003534	0.0000	0.0000
Dibenzo(a,h)anthracene	1.67E-06	0.002480	0.0000	0.0000
Fluoranthene	4.84E-06	0.007187	0.0000	0.0000
Fluorene	4.47E-06	0.006637	0.0000	0.0000
Indo(1,2,3-cd)pyrene	2.14E-06	0.003178	0.0000	0.0000
Phenanthrene	1.05E-05	0.016	0.0000	0.0000
Pyrene	4.25E-06	0.00631	0.0000	0.0000
OCDD	3.10E-09	0.0000046	0.0000	0.0000
Antimony	5.25E-03	7.80	0.0039	0.0039
Arsenic	1.32E-03	1.96	0.0010	0.0010
Barium	2.57E-03	3.82	0.0019	na
Beryllium	2.78E-05	0.04	0.0000	0.0000
Cadmium	3.98E-04	0.59	0.0003	0.0003
Chloride	3.47E-01	515.24	0.2576	na
Chromium	8.45E-04	1.25	0.0006	0.0006
Chromium VI	2.48E-04	0.368	0.0002	na
Cobalt	6.02E-03	8.94	0.0045	0.0045
Copper	1.76E-03	2.61	0.0013	na
Fluoride	3.73E-02	55.38	0.0277	na
Lead (including waste oil)	1.51E-03	2.25	0.0011	0.0011
Manganese	3.00E-03	4.45	0.0022	0.0022
Mercury	1.13E-04	0.17	0.0001	0.0001
Molybdenum	7.87E-04	1.17	0.0006	na
Nickel	8.45E-02	125.47	0.0627	0.0627
Phosphorous	9.46E-03	14.05	0.0070	0.0070
Selenium	6.83E-04	1.01	0.0005	0.0005
Vanadium	3.18E-02	47.22	0.0236	na
Zinc	2.91E-02	43.21	0.02	na
SO_2	182.12	270419	135.21	na
NOx	55	81666	40.83	na
CO	5	7424	3.71	na
TSP	13.88	20610	10.31	na
NMVOC	0.28	416	0.21	na
CO_2	24400	36230145	18115.07	na
			Total HAPs	**0.1144**

Notes:
NHDES Factors 2/2003 and AP42 9/98

Total oil burned	*1484842*	
#6 oil usage	*1484392*	*gallons*
Sulfur content of #6 oil	*1.16*	*%-weighed average*

Range of factors are averaged
Boilers are 2 Babcock Wilcox Model FM20733 with max firing rate of 37.5 mmbtu/hr
Waste was analyzed by CYN on 10/10/07

Waste oil burned	*450*	*gal*
Sulfur content of waste oil	*0.37*	*%*
Lead content of wast oil	*4*	*ppm wt*
Other metals	*non-detect*	

Sulfur content is lower than #6 oil and assume to be that of #6 oil

Waste oi density is	*7*	*lb/gal*
Waste oil weight burned is	*3150*	*lbs/yr*
Lead emission of wast oil	*0.0126*	*lbs/yr as lead*
Waste oil firing rate	*1*	*gpm*
Waste oil lead emission rate	*0.00168*	*lb/hr*

NOx RACT test very close to AP-42, so the AP-42 factor is used.

Monadnock Paper Mills
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Table 12
5/5/2008

Emergency Generator Emissions during 2008

Pollutant	Emission Factor lb/1000 gallons	Emissions lb/yr	Emissions tons/year
SO_2	39.73	18.2	0.00908
NOx	604.2	276.2	0.13812
CO	130.15	59.5	0.02975
TSP	42.47	19.4	0.00971

Basis:

NHDES factors 2/2003
Cummins Model 500 FOCH-2FB

Fuel flow rate	12.7	*gal/hr*
Generator run time	36	*hrs/yr*
Diesel usage	457.2	*gal/yr*

Monadnock Paper Mills
Bennington, NH

Table 13
5/5/2008

Emissions from Propane burner on Coater Dryer during **2008**

Pollutant	Emission Factor lb/1000 gallons	Emissions lb/yr	Emissions tons/year
SO_2	1.5	87.0	0.0435
NOx	14	812	0.4061
CO	1.9	110	0.0551
TSP	0.4	23.2	0.0116
NMVOC	0.3	17.4	0.0087

Basis:

NHDES factors 2/2003
8.4 mmbtu/hr LPG burner

Fuel flow rate	89.4	*gal/hr*
LPG usage	58009	*gal/yr*
S content	15	gr/100cf

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Table 14
5/5/2008

Emissions from the Waste Water Treatment Plant for a Worst Paper Grade

Basis:

Maximum ave flow rate	0.55	mgd	191125	lb/hr
Minimum ave flow rate	0.31	mgd	107725	lb/hr
Worst grade paper	1541-081			
PM2 WE rate	5172	lb/hr		
Resin rate	90	lb/ton		
FF in resin	0.32	wt %		
FF charged to WE	0.745	lb/hr		
FF emitted from PM2 WE	0.635	lb/hr		
FF to clarifier	0.109	lb/hr		
FF to clarifier high flow	0.573	ppm w/w		
FF to clarifier low flow	1.016	ppm w/w		
Operating hours	8760	h/yr		

Water 9 Formaldehyde Emissions:

High flow	g/s	lb/hr	lb/yr	Area-ft2	lb/hr/ft2
Clarifier	1.84E-05	1.46E-04	1.28E+00	na	na
Lagoon 1	3.30E-05	2.62E-04	2.29E+00	54585	4.79E-09
Lagoon 2	1.04E-08	8.25E-08	7.22E-04	54585	1.51E-12
Lagoon 3	3.88E-12	3.08E-11	2.70E-07	32646	9.42E-16
Lagoon 4	2.61E-15	2.07E-14	1.81E-10	32646	6.34E-19
Total	5.14E-05	4.08E-04	3.57E+00		

Low flow	g/s	lb/hr	lb/yr
Clarifier	1.84E-05	1.46E-04	1.28E+00
Lagoon 1	3.30E-05	2.62E-04	2.29E+00
Lagoon 2	1.04E-08	8.25E-08	7.22E-04
Lagoon 3	3.88E-12	3.08E-11	2.70E-07
Lagoon 4	2.61E-15	2.07E-14	1.81E-10
Total	5.14E-05	4.08E-04	3.57E+00

Note-low and high flow loading emission rates remain the same

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Table 14b
6/14/2011

GHG Emissions based on 40 CFR 98 Emission Factors **for** **2008**

			Factors					GHG Emissions		
Sources	**Volume**	**Fuel Type**	**Conversion to Metric**	**HHV**	**EF-CO_2**	**EF-CH_4**	**EF-N_2O**	**CO_2**	**CH_4**	**N_2O**
	gal/yr			**mmbtu/gal**	**kg/mmbtu**	**kg/mmbtu**	**kg/mmbtu**	**metric tons/yr**	**metric tons/yr**	**metric tons/yr**
Boilers	1484392	#6 oil	1.00E-03	0.15	75.1	3.00E-03	6.00E-04	16,722	0.668	0.13
Coater	58009	LPG	1.00E-03	0.092	62.98	3.00E-03	6.00E-04	336	0.016	0.003
							Total	17,058	0.684	0.137
							GWP-factor	1	21	310
							CO_2e	17,057.79	14.36	42.41
							Total CO_2e	**17,114.56**	**metric tons/yr**	
							Potential CO_2e	**38,165.47**	**metric tons/yr**	

Basis: *For combustion sources, excluding portable and emergency equipment only*
Actual fuel usage in 2008
Potential Emissions factor 2.23 *see table 20*
No adjustment has been made for periodic biofuel supplements

	GHG Emissions		
Sources	**CO_2**	**CH_4**	**N_2O**
	lbs/yr	**lbs/yr**	**lbs/yr**
Boilers	36,787,687	1,470	294
Coater	739,450	35	7
Total	**37,527,136**	**1,505**	**301**

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Total Facility Emissions for 2008

	Criteria Pollutants					Other					
	TSP	SO_2	NOx	CO	NMVOC	HAPs	CO_2	CH_4	N_2O	formaldehyde	petroleum distillates
CAS No.							124-38-9			50-00-0	64742-47-8
Source	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
Boilers	20,610	270,419	81,666	7,424	416	229	36,787,687	1,470	294		
PM 1&2 Wet End					942	Refer to formaldehyde emissions summary				Refer to formaldehyde emissions summary	942
PM 1&2 Dry End					65	65				Refer to formaldehyde emissions summary	
Coater					2,787	535				Refer to formaldehyde emissions summary	
Emergency Generator	19	18	276	60							
Coater Dryer	23	87	812	110	17		739,450	35	7		
Waste Water Treatment										3.57	
Total lbs	**20,653**	**270,524**	**82,754**	**7,594**	**4,227**	**829**	**37,527,136**	**1,505**	**301**	**Refer to formaldehyde emissions summary**	**942**
Total tons	**10.3**	**135**	**41.4**	**3.80**	**2.114**	**0.414**	**18,764**	**0.75**	**0.15**	**Refer to formaldehyde emissions summary**	**0.471**
Total tons subject to fee	**10.3**	**135.3**	**41.4**	**3.8**	**2.1**	**na**	**na**	**na**	**na**	**NMVOC**	**NMVOC**

Annual Fee Rate	125.85	$/ton
Fee Payment	**24,553.56**	**$**

Note: Fuel RTAPS are exempt from emission fees and not included

Table 15
6/14/2011
Revised7/7/12

NH RTAPS				
ammonia	vinyl acetate	acetaldehyde	isopropyl alcohol	propylene glycol
7664-41-7	108-05-4	75-07-0	67-63-0	57-55-6
lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
21				
4,209	65			
222	532	2.71	1,183	1,069
4,452	597	2.71	1,183	1,069
2.23	0.299	0.001	0.592	0.535
2.23	NMVOC	NMVOC	NMVOC	NMVOC

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Table 17
6/14/2011

Vinyl Acetate Emissions by Paper Grade

Grade	Resin	PM1								PM2							
		Paper Rate lb/hr	Speed fpm	Width in	WE Resin rate lb/ton	DE Resin rate lb/ton	DE NH_4OH lb/ton	VA Emisson Rate lb/hr	NH3 Emisson Rate lb/hr	Paper Rate lb/hr	Speed fpm	Width in	WE Resin rate lb/ton	DE Resin rate lb/ton	DE NH_4OH lb/ton	VA Emisson Rate lb/hr	NH3 Emisson Rate lb/hr
1861-140	LATEX 25-2819	7703	430	81		150	1	3.466	0.562								
2081-110	LATEX 25-2819	5964	390	88		250	0	4.473	0.000								
2085-085	LATEX 25-2819	7267	615	88		330	0.5	7.194	0.265								
5159-053	LATEX 25-2819	5610	670	100		200	0	3.366	0.000								
						Maximum Rate		**7.194**	**0.562**							**0**	

Basis

Latex 25-2819	*0.6*	*% VA*
VA fraction in sheet	*0*	
NH3	*0.486*	*x 30/100 x lb/hr ammonium hydroxide*

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Table 18
5/5/2008
Revised 7/7/12

Emission from the Coater by Paper Grade

Coating Formulations as Applied to the Coater							
Code	Bone Dry Wt wt %	NH_4OH wet wt %	PG wet wt %	IPA wet wt %	VA wet wt %	RACT VOC (1) lb/lb solid	RACT VOC (2) lb/lb solid
MC-31m-2	60.04	0.094	0.8	0	0	0.0133	0.0000
MC 0005WP	63.1	0.1	1	0	0	0.0158	0.0000
MC 0004WP	56.23	0.1	0.0	0	0	0.0000	0.0000
MC 0007WP	64.15	0	1	0	0	0.0156	0.0000
MC 0009WP	51.8	0	0	0	0	0.0000	0.0000
MC 00011BC	57	0.2	0.6	0	0	0.0105	0.0000
MC 00012BC	35.06	0.1	0	0	0	0.0000	0.0000
MC 00013WP	63.23	0	0.8	0	0	0.0127	0.0000
MC 00014WP	63.21	0.1	0.8	0	0	0.0127	0.0000
MC 00020AB	40.94	0.1	0	0	0	0.0000	0.0000
MC 00021AB	42	0.3	0	0	0	0.0000	0.0000
MC-101F	23.1	0	0	0	0	0.0000	0.0000
MC-101F-B3-23	23.2	0	0	0.5	0	0.0216	0.0216
MC-103	23.8	0	0	0	0	0.0000	0.0000
MC-164	35.72	0	0	0	0	0.0000	0.0000
MC-19B	60	0.1	0.7	0	0	0.0117	0.0000
MC-19g	60	0.1	0.7	0	0	0.0117	0.0000
MC3-163	47.03	0.5	0	0	0	0.0000	0.0000
MC-31-ind	55.09	0.2	0.5	0	0	0.0091	0.0000
MC3-226a	60.56	0.1	0.8	0	0	0.0132	0.0000
MC3-270b	59.43	0.3	0.8	0	0	0.0135	0.0000
MC3-99	10	0	0	0	0	0.0000	0.0000
MC4-109	62.13	0.1	0.7	0	0	0.0113	0.0000
MC4-110	62.33	0.3	0	0	0	0.0000	0.0000
MC4-52a	47.39	0.5	0	0	0	0.0000	0.0000
MC4-52b	46.17	0.2	0	0	0	0.0000	0.0000
MC4-53	46.85	0.2	0	0	0	0.0000	0.0000
MC4-70	62.27	0.4	0	0	0	0.0000	0.0000
MC4-97	58.8	0.2	0	0.8	0	0.0136	0.0136
MC4-97d	58.91	0.1	0	0.8	0	0.0136	0.0136
MC-4u	1	0	0	0	0	0.0000	0.0000
MC5-24F	20.55	0.7	0.6	0	0	0.0292	0.0000
MC5-25con	21.55	0.4	0.5	0	0	0.0232	0.0000
MC5-25F	22.58	0.4	0.5	0	0	0.0221	0.0000
MC5-25G	22.7	0.4	0.6	0	0	0.0264	0.0000
MC5-25I	22.7	0.4	0.6	0	0	0.0264	0.0000
MC5-25mer	22.7	0.4	0.6	0	0	0.0264	0.0000
MC5-25Osp	22.91	0.4	0.6	0	0	0.0262	0.0000
MC5-3	1.6	0.1	0	0	0	0.0000	0.0000
MC5-40	56.94	0.4	2	0	0	0.0351	0.0000
MC-54M-1	59.66	0.2	0.8	0	0.123	0.0155	0.0021
MC-55M-1	55.77	0.20055	0.7	0	0.1	0.0143	0.0018
MC-56M-1	49.91	0.2	0	0	0	0.0000	0.0000
MC-78M	44.27	0.2	0	0	0	0.0000	0.0000
MC-79M	59.25	0.3	0	0	0	0.0000	0.0000
MC9-2P	57.53	0.2	0	0	0	0.0000	0.0000
MC-99b	10	0	0	0	0	0.0000	0.0000
MC-99y	10.25	0	0	0	0	0.0000	0.0000
MC-BC19c	49.9	0.1	0.6	0	0	0.0120	0.0000
MC-BL12b	30.78	0.1	0.8	0	0	0.0260	0.0000
MC-P019	64.92	0.1	0.8	0	0.118	0.0141	0.0018
MC-P19b-2	60.4	0.1	0.5	0.3	0	0.0132	0.0050
MC-T020	60.37	0.1	0.8	0	0	0.0133	0.0000
MC-W002	8.25	0	0	0	0	0.0000	0.0000
Max Rates	**64.92**	**0.7**	**2**	**0.8**	**0.123**	**0.0351**	**0.0216**

Maximum Coater Operating Rates Rates and Emissions		
max speed	800	fpm
max width	51	inches
max coating rate	28	lb-dry/ream
max web rate	204000	ft2/hr
ream	3167	ft2/hr
max web rate	64.4	reams/hr
max coating rate	1804	lb- dry/hr
typical coating	60	% dry solids
typical coating	3006	lb/hr wet solids
max NH_4OH solution applied	21.0	lb/hr
max NH_3 applied and emitted	3.07	lb/hr
max PG applied and emitted	3.0	lb/hr
max IPA applied and emitted	24.0	lb/hr
max VA applied and emitted	3.70	lb/hr
max acetaldehyde applied and emitted	0.739	lb/hr
max formaldehyde emitted	0.0083	lb/hr

Notes:

1 *assumes all PG evaporates*

2 *based on PG not evaporating per Method 24 at 110 C*

NH3 equivalent content in water solution-% 48.6

NH_4OH content in solution-% 30

Vinyl acetate content is calculated based on the application of Airflex 100

PG emission is based on an applied factor of 5 %

All IPA, acetaldehyde and VA are assume to be emitted

3 ***for acetaldehyde:***

Acetaldehyde is not present in Airflex, but present at 0.1 % in another resin-see table 7.

For emission purposes assume that acetaldehyde will be emitted in the same rate as the vinyl acetate in the max coating application calculations

The ratio of acetaldehyde in the applied coating formula is estimated at 0.1/0.5, or 20 % of the vinyl acetate content of Airflex

This ratio is based on the resin contents shown in table 7

The maximum acetaldehyde as applied in the coating is therefore 0.2 x 0.123 or 0.0246% wet

This value is conservative, since the final coating is diluted by the other ingredients in the applied coating

4 ***Formaldehyde***

Formaldehyde is not present in Airflex, but present in other resins at a max of 0.03 %-see Table 7

The ratio of formaldehyde in the coating as applied is estimated at 0.03/0.5=0.06

This ratio is based on the resin contents shown in table 7 and the application rates for acetaldehyde in the applied coating

The maximum free formaldehyde content as applies is therefore 0.06 x 0.123 or 0.00738%

Formaldehyde appliction rates are assumed to be applied at the above operating rates with a FF of 0.03 %

Formaldehyde emission rates are estimated at 0.0372 of applicationrate (see Table 9)

This value is conservative, since the final coating is diluted by the other ingredients in the applied coating

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Table 20
6/14/2011
Revised 7/7/12

Potential Emissions from Process

Process	Pollutant	CAS No.	Potential Emission Rate	
			lb/hr	tons/yr
PM1 WE	petroleum distillates	64742-47-8	0.155	0.680
	ammonia	7664-41-7	0.0000	0.000
	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
PM2 WE	petroleum distillates	64742-47-8	0.0841	0.368
	ammonia	7664-41-7	0.0000	0.000
	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
PM1 DE	formaldehyde	50-00-0	0.00339	0.015
	ammonia	7664-41-7	1.609	7.047
	vinyl acetate	108-05-4	7.1900	31.492
PM2 DE	formaldehyde	50-00-0	0.0000	0.000
	ammonia	7664-41-7	0.389	1.704
	vinyl acetate	108-05-4	0.0000	0.00
Coater	isopropyl alc 99%	67-63-0	24.0	105
	ammonia	7664-41-7	3.07	13.4
	propylene glycol	57-55-6	3.00	13.1
	vinylacetate	108-05-4	3.70	16.2
	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	acetaldehyde	75-07-0	0.739	3.2
Facility	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	petroleum distillates	64742-47-8	**0.239**	**1.05**
	ammonia	7664-41-7	**5.07**	**22.2**
	isopropyl alc 99%	67-63-0	**24.0**	**105**
	propylene glycol	57-55-6	**3.00**	**13.1**
	vinyl acetate	108-05-4	**10.89**	**47.7**
	acetaldehyde	75-07-0	**0.74**	**3.2**

Basis	*Max gross paper tons*	*PM 1*	4.8	*tons/hr*
		PM 2	2.6	*tons/hr*
	Actual gross paper tons for 2008		29114	*tons/yr*
	Maximum operating hours		8760	*hr/yr*
	Potential gross paper tons		64824	*tons/yr*
	Ratio of actual to potential emissions		2.23	
	Fraction of PM1 emissions of total		0.65	
	Fraction of PM2 emissions of total		0.35	

Example PTE calculation

Petroleum distillates are process additivies to the papermachines

Process chemicals usage it directly related and proportional to tons produced

Petroleum distillates emitted in 2008	942	*lbs/yr*
Potential petroleum distillate emissions are	2097	*lb/yr*
Potential petroleum distillate emissions PM1	1360	*lb/yr*
Potential petroleum distillate emissions PM2	737	*lb/yr*

Trace ammonia (20 lb/yr) from dye application is ignored or negligible

0.239	*lb/hr*
0.155	*lb/hr*
0.084	*lb/hr*

Actual Emissions from PM Wet End-2008	*CAS*	*lbs/yr*
petroleum distillates	*64742-47-8*	*942*
ammonia	*7664-41-7*	*20.9*
formaldehyde	*50-00-0*	*7.5*
Actual Emissions from Papermachine Dry End-2008	***CAS***	***lbs/yr***
formaldehyde	*50-00-0*	*6.22*
ammonia	*7664-41-7*	*4209*
vinyl acetate	*108-05-4*	*65*
Actual Emissions from Coater-2008	***CAS***	***lbs/yr***
isopropyl alc 99%	*67-63-0*	*1183*
ammonia	*7664-41-7*	*222*
propylene glycol	*57-55-6*	*1069*
vinylacetate	*108-05-4*	*532*
formaldehyde	*50-00-0*	*0.497*
acetaldehyde	*75-07-0*	*2.71*

For Max Coater Potential Emissions see Table 18
For Max PM PotentialEmissions see Tables 17 and 19
Note that PM1 and PM2 different papergrades, resulting in different maximum emissions for each machine.

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Table 21-b
6/14/2011
Revised 7/7/12

Modeled Impact for Maximum Potential Emissions from PM1 And PM2 and the Coater

Process	Pollutant	CAS No.	Max Emission Rate		Regulation Category			RTAP AAL ENVA 1450-2011		AIC		Modeled Impact		
			lb/hr	tons/yr	VOC	HAP	RTAP	ug/m3-24hr	ug/m3-annual	ug/m3-24hr	pass/fail	ug/m3-24hr	ug/m3-annual	pass/fail
PM1 WE	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	x	x	x	1.3	0.88	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	petroleum distillates	64742-47-8	0.155	0.680	x		x	NA	NA	2.30	NA	0.87	0.165	NA
	ammonia	7664-41-7	0.00000	0.0000			x	100	100	0.00	pass	0.000	0.000	pass
PM2 WE	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	x	x	x	1.3	0.88	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	petroleum distillates	64742-47-8	0.0841	0.368	x		x	NA	NA	1.20	NA	0.46	0.087	NA
	ammonia	7664-41-7	0.00000	0.00000			x	100	100	0.00	pass	0.000	0.000	pass
PM1 DE	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	x	x	x	1.3	0.88	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	ammonia	7664-41-7	1.609	7.05			x	100	100	23.28	pass	8.82	1.55	pass
	vinyl acetate	108-05-4	7.19	31.4922	x	x	x	200	200	104.03	pass	39.4	6.92	pass
PM2 DE	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	x	x	x	1.3	0.88	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	ammonia	7664-41-7	0.389	1.704			x	100	100	5.56	pass	2.17	0.420	pass
	vinyl acetate	108-05-4	0.0000	0.0000	x	x	x	200	200	0.00	pass	0.00	0.000	pass
Coater	isopropyl alc 99%	67-63-0	24.0	105	x		x	1757	1171	1792	fail	179.3	37.4	pass
	ammonia	7664-41-7	3.07	13.4			x	100	100	229	fail	22.9	4.79	pass
	propylene glycol	57-55-6	3.00	13.1	x			NA	NA	224	NA	22.4	4.68	NA
	vinyl acetate	108-05-4	3.7	16.2	x	x	x	200	200	276	fail	27.6	5.77	pass
	formaldehyde	50-00-0	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	x	x	x	1.3	0.88	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	acetaldehyde	75-07-0	0.739	3.2	x	x	x	161	9	55	pass	5.5	1.15	pass
			Total tons per year		170	51	179							

Process	Pollutant	Modeled Impact		
		ug/m3-24hr	ug/m3-annual	pass/fail
Combined PM&Ctr - (see notes)	formaldehyde	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary	Refer to formaldehyde emissions summary
	petroleum distillates	1.33	0.251	na
	ammonia	33.9	6.76	pass
	isopropyl alc 99%	179	37.4	pass
	propylene glycol	22.4	4.68	na
	vinyl acetate	67.0	12.7	pass
	acetaldehyde	5.5	1.15	pass

Notes:

VOC-volatile organic compound
HAP-Hazardous Air Pollutant
RTAP-Regulated Toxic Air Pollutant
RTAP AAL based on Env-A 1400 dated 6/2011

PM1 Wet	45111	*acfm*
PM2 Wet	46051	*acfm*
PM 1 Dry	46100	*acfm*
PM 2 Dry	46663	*acfm*
Coater	8032	*acfm*

AIC-adjusted in-stack concentration
AIC = 0.667 x lb/hr x 10^6 /acfm
AAL-ambient air limit

Maximum impacts based on AERMOD7 modeling:

			UTM East	UTM North
PM1 WE	5.61	*ug/m3/24hr/lb/hr*	261285.59	4765685.00
PM2 WE	5.5	*ug/m3/24hr/lb/hr*	261285.59	4765685.00
PM1 DE	5.48	*ug/m3/24hr/lb/hr*	261285.59	4765685.00
PM2 DE	5.57	*ug/m3/24hr/lb/hr*	261285.59	4765685.00
Coater	7.47	*ug/m3/24hr/lb/hr*	261305.41	4765682.5

			UTM East	UTM North
PM1 WE	1.06	*ug/m3/annual/lb/hr*	261285.59	4765685.00
PM2 WE	1.03	*ug/m3/annual/lb/hr*	261305.41	4765685.00
PM1 DE	0.962	*ug/m3/annual/lb/hr*	261305.41	475682.50
PM2 DE	1.08	*ug/m3/annual/lb/hr*	261305.41	475682.50
Coater	1.50	*ug/m3/annual/lb/hr*	261305.41	4765682.5

Note that maximum impacts are nearly all at the same location so the combined impacts are additive.
See model report

Monadnock Paper Mills
Bennington, NH

Table 1A
6/14/2011

Processed Raw Materials used in 2008 Updated based on information from the 2012 inactive list.

Mat'l Code	Name	MSDS #	Content	CAS # and Application	HMIS	WE	DE	CTR	Usage lbs	OSHA Haz Ingredients	EHS 302	TRI 312	Acute 311	Chronic 311	Fire 312	Reactive 312	Comments
P20044	HERCON 70 (12.5%)	1190	alkyl ketene dimer emulsion	sizing agent	1/0/0	x			40250	n	n	n	n	n	n	n	
P20045	ALUM, ALUMINUM SULFATE (49%)	717	aluminum sulfate	17927-65-0-liquid	1/0/0	x			276091	y	n	n	y	n	n	n	
P20046	SODIUM ALUMINATE-38-45 %	2168	sodium aluminate-38%-1302-42-7	naoh solution	3/0/2	x			7246	y	n	n	y	y	n	n	
P20047	SODA ASH LIGHT	1674	sodium carbonate	497-19-8	1/0/0	x			82282	y	n	n	n	n	n	n	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %		1/1/0	x			22028	y	n	n	y	n	n	n	
P20052	PALE FLUID PEXOL 50 SIZE (50%)	873	rosin sizing agent	aqueous soln	1/1/0	x			9357	n	n	n	n	n	n	n	sol
P20056	AEROSOL 501 SURFACTANT	405	disodiumisodecyl/sulfosuccinate	surfactant 37294-49-8	1/1/0		x		2755	n	n	n	y	n	n	n	sol
P20057	PLASMINE PLH 50 SIZE (50%)	1077	rosin sizing agent	trace ammonia <1 %	1/0/0	x			126082	y	n	n	y	n	n	n	
P20058	DETAC DC3970	1657	stickies control	WB detackifyer	1/0/0	x			33736	n	n	n	n	n	n	n	
P20059	DARA-SPRAY FP5500	1505	stickies control	polymer	0/0/0	x			3910	n	n	n	n	n	n	n	
P20060	OMYAFIL 72%	243	round limestone-calcium carbonate	1317-65-3	0/0/0	x	x		2629693	y	n	n	y	n	n	n	no sol
P20063	X-2111 CLAY (DRY, BAGS)	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x		x	10800	y	n	n	n	n	n	n	no sol
P20065	HIBRITE CLAY SLURRY	797	clay slurry-kaolin	0.-2.5 % tio2	0/0/0	x			62491	y	n	n	y	n	n	n	no sol
P20066	REGULAR CLAY FILLER SLURRY	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	0/0/0	x			357405	y	n	n	n	n	n	n	no sol
P20068	MISTRON VAPOR TALC	3389	talc-magnesium silicate 14807-96-6 99%		1/0/0	x			136063	y	n	n	n	n	n	n	
P20070	ANSILEX 93 CLAY	609	clay-kaolin--aluminum silcate powder	0.4-2%-tio2	0/0/0	x			397923	y	n	n	n	y		n	not sol
P20072	HYDRAD C (HYDRATED ALUMINIA)	722	al2O3 slurry	1344-28-1	0/1/0	x			30800	y	n	n	y	n		n	not sol
P20073	PYROLUX 585D	2993	ammonium sulfamate/sulfamic acid	fire retardant	2/1/0		x		7532	y	n	n	y	n	n	n	
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA		0/0/0		x		66909	n	n	n	n	n	n	n	sol.prop 6 warning
P20076	SCRIPSET 520 RESIN	658	styrene maleic anhydride polymer, 0.85% styrene	32959-78-1 powder	1/0/0		x		17729	y	n	y	n	y	y	n	0.1 %demin
P20079	AURALUBE 243 LIQUID EMULSION	1329	EG 1-5% 107-21-1,nonylphenylethoxylate 5-10% 127087-87-0	polyetylene emulsion	2/1/0		x		21539	y	n	y	y	n	n	n	
P20081	POLYGRAPHICS C	1501	polyurethane solution		1/1/0	x	xxxxx		6726	n	n	n	n	n	n	n	
P20084	A-25 CATALYST (25%)	1331	ammonium chloride 25% 12125-02-9		2/1/0		x		6650	y	n	n	y	n	n	n	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant		1/1/0		x		34200	n	n	n	n	n	n	n	
P20086	AURALUBE MPW II WAX (35%)	1330	alkylpolyglycolether 5-10% 9004-98-2,1-5% dodecylbenzenesulfonic acid 27176-87-0-lubricant		2/1/0		x		783	y	n	n	y	n	n	n	
P20087	AQUA AMMONIA 26	728	ammonium hydroxide 30%	7664-41-7	3/1/0		x	x	30391	y	y	y	y	y	y	n	95% DE
P20091	PONTAMINE BRILLIANT VIOLET BRW	1943	urea 10-20 %-57-13-5,triethanol amnine 102-71-6 <5%,triethanolamine hydrochloride 637-39-8 <5%	dye	1/1/1		x		511	n	n	n	n	n	n	n	
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	dye	0/1/0	xxxx			193	n	n	n	n	n	n	n	
P20095	CATO-SIZE 270A STARCH	2132	cationic corn strach		1/1/0	x			4619	n						n	
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	chloromethylisothiozolinone 55965-84-9-0.1 %	1/1/0		xxxxx		464011	y	n	n	y	n	n	n	95 % DE
P20099	PONTAMINE FAST TURQUOISE 8GLP LIQUID	370	copper 2 %	triethanolamine 102-71-6 10-15%	1/1/0		xxxxx		161	y	n	n	y	n	n	n	
P20111	INTRABOND LIQUID YELLOW 5GA	2383	triethanolamine 10 %	dye	2/1/0	x			1233	y	n	n	y	n	n	n	
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	pigment	0/1/0	x			4433	n	n	n	n	n	n	n	
P20123	CAUSTIC SODA FLAKES	449	sodium hydroxide-solid		3/0/1				4214	y	n	n	y	n	n	n	
P20127	PONT FAST RED 8 BLX DRY	741		pigment	0/1/0	x			86	n	n	n	n	n	n	n	
P20129	HALOPONT BLUE RNM LIQUID DYE	3077	56-81-5 glycerine 2%,	pigment	1/1/0	x			348	y	n	n	y	n	n	n	
P20130	LEUCOPHOR B-302 OPTICAL BRIGHT	637	stilbenen brightener	dye	1/1/0	x			143	y	n	n	n	n	n	n	
P20134	5G BRILLIANT YELLOW DRY DYE	515	naoh 2%, lead 2.94%	dye	1/1/1	x			0	y	n	n	y	n	n	n	
P20135	BAYFERROX YELLOW 1420M IRON OX	389	iron oxide	pigment	0/0/0	x			223	n	n	n	n	n	n	n	
P20136	SUPRA YELLOW GY PONOLITH LIQUI	1364	Ni 0.87% 7440-02-0	pigment	1/1/0	x			1115	y	n	n	y	y	n	n	
P20139	PONT FAST SCARLET 4B LIQUID DY	1638	azo dye	Co 1.24ppm	0/1/0	x			12153	n	n	n	n	n	n	n	
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm		1/1/0	x			2373	y	n	n	y	y	n	n	
P20143	RUTILE TITANIUM DIOXIDE (BAGS)	502/3306	tio2 powder		0/0/0	x			70255	y	n	n	y	y	n	n	
P20145	HYDROCARB 90	739	calcium carbonate		1/0/0	x		x	724581	y	n	n	y	n	n	n	
P20149	alcosperse 149	745	sodium polyacrylate in water	acrylic acid	1/0/0			x	5216.09	y	n	y	y	n	n	n	tri acrylic acid
P20150	ISOPROPYL ALCOHOL 99%	667	isopropyl alc 99%	67-63-0	2/3/0			x	1183	y	n	n	y	n	y	n	
P20155	ACRONAL S 504	2373	acrylate polymer dispersion		1/1/0			x	320548	n	n	n	n	n	n	n	
P20158	VYCARTIN 842-30 LATEX	2369	vinylchloride copolymer		1/0/0			x	1225.1	n	n	n	n	n	n	n	
P20162	ropaque HP1055	1874	styrene acrylic copolymer	ammonia 0.1 %	1/0/0			x	821	y	n	n	y	n	n	n	
P20176	PONTAMINE BLACK SP LIQUID	514	nickel,cobalt, urea	dye	0/1/0	x			10659	n	n	n	y	n	n	n	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion		1/0/0			x	29589	y	n	n	n	n	n	n	
P20182	25-2819 LATEX	3057	cross linking agent	vinyl acetate 0.6 %	1/0/0		x		10780	y	n	y	y	n	n	n	check VAM
P20286	HYCAR 26707 LATEX (60%)	2165	acrylic polymer emulsion		1/0/0		x		1515486	n	n	n	n	n	n	n	
P20289	HYDROCARB 60 (CAL. CARBONATE)	739	calcium carbonate		1/0/0	x		x	179279	y	n	n	n	n	n	n	
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer		1/0/0			x	4534	n	n	n	n	n	n	n	
P20316	GLYCERINE	1035	vegetable derived		2/1/0		x	x	11992	y	n	n	y	y	n	n	99 % DE
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	lab use	1/0/0			x	2710	n	n	n	n	n	n	n	

P20320	CR SPZ MOLECULAR FIBER	1776	aluminum silicate powder		1/0/0	x			25900	y	n	n	n	n	n	n	
P20326	innofix 240	2739	cationic polymer solution		1/0/0			x	3241	n	n	n	n	n	n	n	
P20348	albacar W-5970	1991	calcium carbonate 471-34-1		0/0/0			x	2325	y	n	n	n	n	n	n	
P20350	PARAGUM 109	2562	thickener		1/1/0			x	73262	n	n	n	n	n	n	n	
P20355	ANATASE TITANIUM DIOXIDE (BAGS)	3050	tio2 powder		0/0/0	x			718065	n	n	n	n	n	n	n	
P20390	Blankophor UW Liquid	3076	whitener agent, urea 15-30%		1/1/0		x		322505	y	n	n	y	n	n	n	
P20401	PROPYLENE GLYCOL	2244	propylene glycol 100%-57-55-6		0/1/0			x	21389	n	n	n	n	n	n	n	
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer		0/0/0			x	327	n	n	n	n	n	n	n	
P20415	ALBACAR HO PCC	2710	calcium carbonate slurry		0/0/0	x			20713	y	n	n	y	n	n	n	
P20416	leucophor fts liquid	2585	stilbene flourescent	colorant	1/10			x	1257	n	n	n	n	n	n	n	100% to CTR
P20421	hydrol 710 ath	2885	aluminum trihydroxide slurry		1/1/0	x			216075	y	n	n	y	n	n	n	
P20422	hycar 26391	3082	acrylic emulsion	chloromethylisothiazolidone <0.1 %	2/1/0		x		25708	y	n	n	y	n	n	n	
P20428	pluronic L-61	2764	polyglycol 9003-11-6	surfactant	1/1/0			x	9688	n	n	n	n	n	n	n	
P20443	pontamine yellow GX powder	516	yellow 11		0/1/0	x			526	n	n	n	n	n	n	n	
P20445	Polygraphix bmp	2519	styrene acrylate copolymer dispersion		0/1/0		xxxxx		59756	n	n	n	n	n	n	n	
P20458	albacar HO Pcc Slurry	2710	calcium carbonate slurry		0/0/0	x			1005612	y	n	n	y	n	n	n	
P20461	5152 anionic dry strength	2920	polymer solution		1/0/0	x			0	n	n	n	n	n	n	n	
P20462	ponolith red wc	2923	1-2% ammonium hydroxide 1336-21-6	pigment	2/1/0	x			1885	y	n	y	y	n	n	n	
P20466	pontamine bril blue a liquid dye	1511	lead 4.3 ppm,cu 1%	pigment	0/1/0	x			7701	n	n	n	n	n	n	n	
P20467	pontamine brilliant violet 6b liquid 50	2954	pigment		0/1/0	x			1499	n	n	n	n	n	n	n	
P20468	STA-LOK 400 CATIONIC STARCH	152	starch		1/0/0	x			5584	y	n	n	n	n	n	n	
P20505	1/4 X 6 dbf BRT TYPE 66 NYLON	1498	fiber nylon		0/0/0	x			0	n	n	n	n	n	n	n	
P20507	kymene 621	2943	1,3 dichloropropanol 96-23-1 -1 %	wet strengthresin	2/0/0	x			120761	y	n	n	y	n	n	n	
P20510	penford 280	566	corn starch		0/1/0		x		1100487	y	n	n	n	n	n	n	
P20511	etacryl 306	2951	acrylic copolymer		1/0/0			x	0	n	n	n	n	n	n	n	
P20523	pontamine bond yellow 303	2965	dye		0/1/0	x			6071	n	n	n	n	n	n	n	
P20528	PENFORD GUM 280 - BAGS	566	corn starch		0/1/0		x		70372	y	n	n	n	n	n	n	
P20530	blankophor p150-us	3083	stilbene dye		0/1/0	x			35016	n	n	n	n	n	n	n	
P20567	Covercarb HP	739	calcium carbonate		1/0/0			x	11123	y	n	n	n	n	n	n	
P20568	Airflex 100 HS	2668	vinylacetate copolymer	<0.5% vinyl acetate monomer	1/0/0			x	89871	n	n	y	n	n	n	n	
P20569	ultra gloss 90	3168	aluminum silicate powder or kaolin	trial	0/0/0			x	17565	y	n	n	n	y	n	n	
P20570	ultra white 90	3169	Kaolin, sio3	trial	0/0/0			x	5180	y	n	n	n	n	n	n	
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	trial	1/0/0			x	0	n	n	n	n	n	n	n	
P20576	chemcor emulsion	3178	ethen homopolymer emulsion	trial	1/0/0			x	140	n	n	n	n	n	n	n	
P20582	bersize 6409	3226	sizing agent	formaldehyde 0.113 %	2/1/0		xxxxx		24057	y	y	y	y	y	n	n	check formaldehyde
P20583	hycar 26879	3225	acrylic polymer emulsion	trial	1/1/0		x	x	797738	n	n	n	n	n	n	n	
P20590	elcofix lf	3249	resin solution with 8% ethylene glycol 11-46-6	trial	2/1/0	x			0	y	y	y	y	y	n	n	
P20591	elcoment red RP	3250	ammonia 0.4 % 7664-41-7		1/1/0	x			0	y	n	n	y	n	n	n	
P20592	elcoment red nr	3251	aqueous pigment		1/1/0	x			0	n	n	n	n	n	n	n	
P20593	elcoment yellow prb	3252	aqueous pigment		1/1/0	x			0	n	n	n	n	n	n	n	
P20594	elcoment yellow yp	3253	aqueous pigment		1/1/0	x			0	n	n	n	n	n	n	n	
P20595	elcoment red GP	3254	aqueous pigment		1/1/0	x			0	n	n	n	n	n	n	n	
P20597	aersol ot-75	2975	surfactant	ethanol 6-7%-lab	2/3/0			xxxxx	43	y	n	n	y	y	y	n	
P20599	perform PA8137	1481	polyacrylamide, petrol distil 30%-drainage aid	retention aid	2/1/0	x			3476	y	n	n	y	y	n	n	
P20600	elcoment violet	3259	organic pigment-30%		2/1/0	x			0	y	n	y	y	n	n	n	
P20601	elcoment blue	3257	pigment, copper 3 % copper compounds 20%		2/1/0	x			0	y	n	y	y	n	n	n	
P20602	elcoment black	3256	pigment, diethylene glycol 111-46-4 5%, carbon black 34%		2/1/0	x			0	y	n	n	n	n	n	n	
P20610	sodium bicarbonate	3272	sodium bicarbonate	144-55-8	0/0/0	x			463	n	n	n	n	n	n	n	
P20615	kymene 821	3285	1,3 dichloropropanol-96-23-1	amine polymer	2/0/0	x			16737	y	n	n	y	y	n	n	
P20620	tronox r-pl tio2	3306	al2o3 13463-67-7 90%,alo2 1344-28-1 5%,alpo4-5%	powder	1/1/0			xxxxx	60935	y	n	n	y	n	n	n	
P20632	hycar 26469 emulsion	2857	polymer emulsion	trial	1/0/0		x		0	y	n	n	n	n	n	n	
P20634	hydrasperse 90 powder	3322	Kaolin-100%	1332-58-7	1/0/0			xxxxx	19634	y	n	n	n	n		n	
P20635	pergasol brown f2	3348	colorant-urea 1-2%	dye	0/1/0	x			0	n	n	n	n	n	n	n	
P20636	carbobond 26373	2723	acrylic polymer emulsion	trial	0/0/0		x		30867	n	n	n	n	n	n	n	
P20638	halopont blue rnd	3358	glycerin 1-5%. PG 1%	dye	1/1/0	x			229	y	n	n	y	n	n	n	
P20643	celvolit dm1831e	3392	vinyl acetate copolymer, vinyl acetate 108-05-4 0.2%	trial	1/0/0			xxxx	0	y	n	y	y	y	n	n	
P20645	perform sp7200	3284	petrol distil 64742-47-8 32%, ethox alcohol c12-16 <2%	retention aid -acrylamide copolym	2/1/0	x			0	y	n	n	y	y	n	n	
P20647	fennosil 515	3363	silicone dioxide solution 7631 -86-9		1/0/0	x			1977	y	n	n	y	n	n	n	
P20650	vycar 450X61	3449	vinyl chloride copolymer		1/0/0			x	9330	y	n	n	n	n	n	n	
P20651	vycar 460x49	2631	vinyl chloride copolymer		1/1/0			x	0	y	n	n	n	n	n	n	
P20652	vycar 460x95	3374	vinyl chloride copolymer	trial	1/0/0			x	0	y	n	n	y	n	n	n	
P20657	nalco 63001	3381	lab only	trial	1/1/0		x		168	n	n	n	n	n	n	n	
P20660	ultraphase size agent	3385	rosin size	aluminum sulfate 10043-01-3 3-4	1/0/0	x			1727	y	n	n	y	n	n	n	

P70249	defoamer fd-62k	86	defoamer	emulsion in water	0/0/0		x		6048	n	n	n	n	n	n	n	
P78000	webcam fcl	1315	sodium hydroxide solution 5-15	inactive	3/0/0	x			51110	n	n	n	y	y	n	n	
P78002	foamkill 639q	454	organo silicone	bp 480F <1% volatile	1/1/0		x		4830	n	n	n	y	n	n	n	bp 480 F
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	trial	2/1/0	x			3436	y	n	n	y	y	n	n	
P78019	Webco	3355	naoh 5-15%	cleaning compound	3/0/0	x			39712	n	n	n	n	n	n	n	

Notes:

Unused materials dropped at 0-5 lbs along with calculation

Lab trial dropped at 500 or less

Material no longer in use since mid 2009 are excluded

PM-papermachine

WE-wet end

CTR-coater

DE-size press or dry end

Monadnock Paper Mills
Bennington, NH
Formaldehyde Evaluation Table
Evaluation of Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Date Modified **4/3/2013**

Mat'l Code	Name	MSDS #	Content	CAS # and Application	Inorganic Compund - No Potenital to produce formaldehyde	Organic Compounds that may have potential to generate formaldehyde-basis	Comments
P20044	HERCON 70 (12.5%)	1190	alkyl ketene dimer emulsion	sizing agent		http://www.innventia.com/upload/13860/Lindstr%C3%B6mLarsson2008.pdf. Appears to also be used for sizing. Hydroysis will produce ketones, however, it does not appear to be able to produce formaldehyde.	
P20045	ALUM, ALUMINUM SULFATE (49%)	717	aluminum sulfate	17927-65-0-liquid	Inoganic		
P20046	SODIUM ALUMINATE-38-45 %	2168	sodium aluminate-38%-1302-42-7	naoh solution	Inoganic		
P20047	SODA ASH LIGHT	1674	sodium carbonate	497-19-8	Inoganic		
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %			http://hip.sagepub.com/content/15/4/519.short. The poly(hydroxy-amide) [PHA] family of polymers possess not only high temperature stability, but also form a more thermally stable polymer (polybenzoxazole) [PBO] during thermal decomposition. High-molecular-weight poly(hydroxy amide ethers) of the general structure [−CH2CH(OH)CH2OC6H4C(CH3)2C6H4OCH2CH(OH)CH2OC6H4NHC(O)RC(O)NHC6H4O−]n or [−CH2CH(OH)CH2OC6H4C(CH3)2C6H4OCH2CH(OH)CH2OC6H4NHC(O)C6H4O−]n. Levogen PM contains less than 25 ppm formaldehyde per vendor review.	
P20052	PALE FLUID PEXOL 50 SIZE (50%)	873	rosin sizing agent	aqueous soln		http://www4.ncsu.edu/~hubbe/ROSN.htm. Sizing is used during paper manufacture to reduce the paper's tendency when dry to absorb liquid http://chemicalchem.wordpress.com/2012/04/07/rosin-sizing-agent-sizing-mechanism/ http://www.ncsu.edu/bioresources/BioRes_02/BioRes_02_1_106_145_Hubbe_Sizing_of_Paper_Review.pdf	
P20056	AEROSOL 501 SURFACTANT	405	disodiumisodecyl/sulfosuccinate	surfactant 37294-49-8		http://cinobee.en.alibaba.com/product/524822568-210145156/Detergent_Disodium_Dodecyl_Sulfosuccinate_DLSS_50_.html Used for shampoo,bath dew,foam shaving products	
P20057	PLASMINE PLH 50 SIZE (50%)	1077	rosin sizing agent	trace ammonia <1 %		See discussion P20052	
P20058	DETAC DC3970	1657	stickies control	WB detackifyer		Per MSDS & Vendor information	
P20059	DARA-SPRAY FP5500	1505	stickies control	polymer		MSDS review - ingredients not listed. Section 10 of MSDS - Stability Reactivity - No hazardous decomposition indicated. Section 11 - Toxicilogical Information not listed has a carcinogen.	
P20060	OMYAFIL 72%	243	round limestone-calcium carbonate	1317-65-3	Inoganic		
P20063	X-2111 CLAY (DRY, BAGS)	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	Inoganic		
P20065	HIBRITE CLAY SLURRY	797	clay slurry-kaolin	0.-2.5 % tio2	Inoganic		
P20066	REGULAR CLAY FILLER SLURRY	569	clay slurry-kaolin-alum silicatate	tio2-.24-1.4 %	Inoganic		
P20068	MISTRON VAPOR TALC	3389	talc-magnesium silicate 14807-96-6 99%		Inoganic		
P20070	ANSILEX 93 CLAY	609	clay-kaolin--aluminum silcate powder	0.4-2%-tio2	Inoganic		
P20072	HYDRAD C (HYDRATED ALUMINIA)	722	al2O3 slurry	1344-28-1	Inoganic		
P20073	PYROLUX 585D	2993	ammonium sulfamate/sulfamic acid	fire retardant	Inoganic		

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P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA			39 ppm per vendor - Cross linking EVA Copolymer - Ehtylene Vinyl Acetate - Hydolysis of EVA five ethylene vinyl alcohol : Source:wikipedia.org Can contain trace levels of vinyl acetae. Thermal Decomposition products include: CO, CO2, hydrocarbons. Per the Canadaian government, Vinyl acetate is not considered to be harmful to human health (CEPA)	
P20076	SCRIPSET 520 RESIN	658	styrene maleic anhydride polymer, 0.85% styrene	32959-78-1 powder		per vendor	0.1 %demin
P20079	AURALUBE 243 LIQUID EMULSION - Starlube 243	1329	EG 1-5% 107-21-1,nonylphenylethoxylate 5-10% 127087-87-0	polyetylene emulsion		Per vendor - Polyethlene emulsion - Ethylene glycol 5%; nonylphenol ethoxlate - 10% - Hazardous decomposition not anticipated.	
P20081	POLYGRAPHICS C	1501	polyurethane solution			Per vendor	
P20084	A-25 CATALYST (25%)	1331	ammonium chloride 25% 12125-02-9		Inorganic	Per vendor	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant			.06 pr vendor - MSDS review & vendor information	
P20086	AURALUBE MPW II WAX (35%) - Starlube MPW II	1330	alkylpolyglycolether 5-10% 9004-98-2,1-5% dodecylbenzenesulfonic acid 27176-87-0-lubricant			Per vendor - Textile lubricant - Alkyl polyglycol ether 10; dodecylbenzene Sulfonic Acid 5% - hazarous decomposition does not occur. Parafix Waxes ,1%; ethene 1%, Potasium Hydroxide 1%. Formaldehye is a listed chemical in CA. Per MSDS does not contain formaldehyde.	
P20087	AQUA AMMONIA 26	728	ammonium hydroxide 30%	7664-41-7	Inoganic	Per vendor - Ammonia 30% and water. No formaldehyde	
P20091	PONTAMINE BRILLIANT VIOLET BRW	1943	urea 10-20 %-57-13-5,triethanol amnine 102-71-6 <5%,triethanolamine hydrochloride 637-39-8 <5%	dye		Per vendor	
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	dye		2.5 ppm per vendor - Azo Dye. CA Prop 65 Cobalt 0.507 ppm & Acetaldehyde 1.2 ppm - formaldehyde and lead and nickel are no longer listed on the MSDS.	
P20095	CATO-SIZE 270A STARCH	2132	cationic corn strach			Per vendor - cationic starch compound - no formaldehyde.	
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	chloromethylisothiozolinone 55965-84-9-0.1 %		Per vendor inofrmation the raw material contains 0.040% free formaldehyde. The product does have the potential to generate formaldehyde per email from Mark Wolfinger.	
P20099	PONTAMINE FAST TURQUOISE 8GLP LIQUID	370	copper 2 %	triethanolamine 102-71-6 10-15%		Per vendor - Copper Pthalocyanine pigment - 15% triethanolamine	
P20111	INTRABOND LIQUID YELLOW 5GA	2383	triethanolamine 10 %	dye		Per vendor - triethanol amine 10%, Dye compound 35%, water 55%. Decompisition oxidation produce oxides of carbon, nitrogen, and or sulfur. No chemicals reported under California Prop 65. -	
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	pigment		2.5 ppm per vendor	
P20123	CAUSTIC SODA FLAKES	449	sodium hydroxide-solid		Inoganic	Per vendor	
P20127	PONT FAST RED 8 BLX DRY	741		pigment		Per vendor - triethanol amine 10%, Dye compound 35%, water 55%. Decompisition oxidation produce oxides of carbon, nitrogen, and or sulfur. No chemicals reported under California Prop 65.	
P20129	HALOPONT BLUE RNM LIQUID DYE	3077	56-81-5 glycerine 2%,	pigment		Per vendor - Triphenylmethane dye - glycerine 2%, pigment blue 3%; CA Propo 65 - Acetaldehyde < 2 ppm, MA vinyl acetate < 3 ppm, Crotonaldehyde < 3ppm, NJ - propylene glycol 1%, D- glucitol 1% -	
						Per vendor - These chemicals do not possess functional groups (esters, carbamates, etc.) that are normally expected to be susceptible to abiotic hydrolysis. Based on the review of the structure and the above tecbical paper no potenital to generate formaldehyde	

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P20130	LEUCOPHOR B-302 OPTICAL BRIGHT	637	stilbenen brightener	dye		http://www.epa.gov/hpv/pubs/summaries/stilbene/c16115tp.pdf	
P20134	5G BRILLIANT YELLOW DRY DYEpontamine b	515	naoh 2%, lead 2.94%	dye		Per vendor	This raw material is no longer used.
P20135	BAYFERROX YELLOW 1420M IRON OX - Bay	389	iron oxide	pigment	Inoganic	Inorganic Iron Oxide and other inorganic oxides - Arsenic 25 ppm, Nickel 200 pm	
P20136	SUPRA YELLOW GY PONOLITH LIQUI	1364	Ni 0.87% 7440-02-0	pigment	Inorganic	Azo nickel complex - Dye - yellow pigment 10%, NJ - proplylene glycol 1%, melamine 1%, California Prop 65 - nicjel 0.868%, cobalt 7.72 ppm	
P20139	PONTamine FAST SCARLET 4B LIQUID DY	1638	azo dye	Co 1.24ppm		Azo Dye - CA Prop 65 Cobalt 1.24 ppm	
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm			Carbon Black mixture - Diethylene glycol 7%, carbon black 40%. CA Propo 65 - 10 ppm formaldehyde.	
P20143	RUTILE TITANIUM DIOXIDE (BAGS) - Kronos	502/3306	tio2 powder		Inoganic	Inorganic titantium diooxide	
P20145	HYDROCARB 90	739	calcium carbonate		Inoganic	Limestone 98.5 % and Silica Quartz 0.3%	Same as P20289, P20147, & P20567
P20149	alcosperse 149	745	sodium polyacrylate in water	acrylic acid		**Sodium polyacrylate**, also known as **waterlock**, is a polymer with the chemical formula $[-CH_2-CH(COONa)-]_n$ widely used in consumer products. It has the ability to absorb as much as 200 to 300 times its mass in water. Acrylate polymers generally are considered to possess an anionic charge. While sodium neutralized polyacrylates are the most common form used in industry, there are also other salts available including potassium, lithium and ammonium. Decomposition occurs at temperatures above 200 C. Used in disposable diapers. http://en.wikipedia.org/wiki/Sodium_polyacrylate	tri acrylic acid
P20150	ISOPROPYL ALCOHOL 99%	667	isopropyl alc 99%	67-63-0		**Isopropyl alcohol** (also **isopropanol**, **propan-2-ol**, **2-propanol**, rubbing alcohol or the abbreviation **IPA**) is a common name for a chemical compound with the molecular formula C_3H_8O. It is a colorless, flammable chemical compound with a strong odor. It is the simplest example of a *secondary alcohol*, where the alcohol carbon is attached to two other carbons sometimes shown as $(CH_3)_2CHOH$. It is a structural isomer of propanol. Thermal decomposition products: oxides of carbon. http://en.wikipedia.org/wiki/Isopropyl_alcohol http://www.telecheminternational.com/IPA_Reagent_ACS.PDF	
P20155	ACRONAL S 504	2373	acrylate polymer dispersion			Dispersion polymer - NJTS-50028-NCD 60% - CA Prop 65 product contains a chemical know to cause cancer.	
P20158	VYCARTIN 842-30 LATEX	2369	vinylchloride copolymer			.032% free formaldehyde-Per vendor inofrmation the raw material contains 0.032% free formaldehyde. The product does have the potential to generate formaldehyde per email from Mark Wolffinger. .	
P20162	ropaque HP1055 Rohm & Haas	1874	styrene acrylic copolymer	ammonia 0.1 %		Per vendor - Styrene acrylic co polymner 27%, ammonia 0.1%, residual monomers 500 ppm, water balance	

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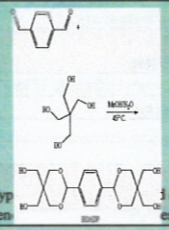
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestuff	WE	Inorganic Pgment	Per MSDS 3.2 ppm formaldehyde. - Usage from July 2012 report is scaled for 12 months.	
P20176	PONTAMINE BLACK SP LIQUID	514	nickel,cobalt, urea	dye	Inoganic	Per vendor	**This raw material is no longer used.**
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion			Per vendor inofrmation the raw material contains 0.050% free formaldehyde. The product does have the potential to generate formaldehyde per email from Mark Wolffinger.	
P20182	25-2819 LATEX - X-link 2819 (252819)	3057	cross linking agent	vinyl acetate 0.6 %		Vinyl acetate 0.6%, vinyl acetate copolymer 45%, water balance. CA Prop 65 Trace amounts of: n-methyl acrylamide, acrylamide, formaldehyde, acetaldehyde, ethylene oxide, 1,4 dioxane. Assumed 2.5 ppm	check VAM
P20286	HYCAR 26707 LATEX (60%)	2165	acrylic polymer emulsion			Acrylic Polymer - Per vendor does not contain formaldehyde	
P20289	HYDROCARB 60 (CAL. CARBONATE)	739	calcium carbonate		Inoganic		
P20290	dur-o-set elite 25-299A Plus	2704	vinylacetate copolymer			vinyl acetate copolymer 53%, water 51%. CA Prop 65 Trace amounts of: formaldehyde, acetaldehyde, ethylene oxide, 1,4 dioxane. (Contact Vendor) - Assume 2.5 ppm formaldehyde	
P20316	GLYCERINE	1035	vegetable derived			Per vendor Glycerine 95%	99 % DE
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	lab use		trace amount per vendor - vinyl acetate copolymer 51%, water 51%. CA Prop 65 Trace amounts of: formaldehyde (assume 2.5 ppm), acetaldehyde	
P20320	CR SPZ MOLECULAR FIBER	1776	aluminum silicate powder		Inoganic	No	
P20326	innofix 240	2739	cationic polymer solution			Typ  above. Based on information from MSDS and ven es not have the potenital to generate formaldehyde.	
P20348	albacar W-5970	1991	calcium carbonate 471-34-1		Inoganic		
P20350	PARAGUM 109	2562	thickener			Poly acrylic acid - dryed materials may produce CO, CO2, NOx, and other products from burning aromatic hydro carbons.- Ethyl acrylate <0.02%, per vendor & MSDS	
P20355	ANATASE TITANIUM DIOXIDE (BAGS)	3050	tio2 powder		Inoganic		
P20390	Blankophor UW Liquid	3076	whitener agent, urea 15-30%			Ionic Optical Brightner - Per MSDS no formaldehyde	**This raw material is no longer used.**
P20401	PROPYLENE GLYCOL	2244	propylene glycol 100%-57-55-6			per vendor - 60-100% propylene glycol	
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer			per vendor - Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger. .	
P20415	ALBACAR HO PCC	2710	calcium carbonate slurry			Per vendor - This raw material is preceipitated calcium carbonate. There is not potential to generate formaldehyde.	**This raw material is no longer used.**

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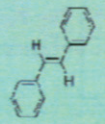
P20416	leucophor fts liquid	2585	stilbene flourescent	colorant		 10 ppm formaldehyde per vendor - Trans stilbene chemical structure above. Stilbene fluorscent brightner Coater operation.	100% to CTR
P20421	hydrol 710 ath	2885	aluminum trihydroxide slurry		Inoganic		
P20422	hycar 26391	3082	acrylic emulsion	chloromethylisothiazolidone <0.1 %		.039 % free formaldehyde per vendor - Per Vendor free formaldehyd is 0.039%. The email from Mark Wolfinger indicates that this product is expect to generate "high levels of formaldehde. The quanity is not quantified.	
P20428	pluronic L-61	2764	polyglycol 9003-11-6	surfactant		per vendor methyl-oxirane polymer with oxirane 100% - CA Prop 65 indicates the raw material contains Ethylene oxide; 1,4-Dioxane (assume 2.5 ppm). (C3-H6-O.C2-H4-O)x	
P20443	pontamine yellow GX powder	516	yellow 11			Per vendorNo Potential to generate formaldehyde per MSDS review - Yellow GXG Liquid is listed in June 8, 2012 letter from Kemira	
P20445	Polygraphix bmp	2519	styrene acrylate copolymer dispersion			Per vendor	
P20458	albacar HO Pcc Slurry	2710	calcium carbonate slurry		Inoganic		
P20461	5152 anionic dry strength	2920	polymer solution			Per vendor	**This raw material is no longer used.**
P20462	ponolith red wc	2923	1-2% ammonium hydroxide 1336-21-6	pigment		Ammonia solution, propane 1,2 diol	
P20466	pontamine bril blue a liquid dye	1511	lead 4.3 ppm,cu 1%	pigment		Copper phthalocyanine dye 1%, water 1%	
P20467	pontamine brilliant violet 6b liquid 50	2954	pigment			Per vendor	
P20468	STA-LOK 400 CATIONIC STARCH	152	starch			cationic potato starch. There is no potential to generate formaldehyde.	
P20505	1/4 X 6 dbf BRT TYPE 66 NYLON	1498	fiber nylon			no- nylon fiber	**This raw material is no longer used.**
P20507	kymene 621	2943	1,3 dichloropropanol 96-23-1 -1 %	wet strengthresin		1,3 dicholor propane 1% - aqueous solution of a cationic amine polymer-epichlorohydrin adduct.Hazardous decomposition will produce HCL, CO,HCN, NOX, ammonia and CO2. - see MSDS & http://www.inchem.org/documents/pims/chemical/pim419.htm	
P20510	penford Gum 280	566	corn starch			Per vendor - Bulk corn starch -2 hydroxyethyl starch.	
P20511	etacryl 306	2951	acrylic copolymer			Per vendor	**This raw material is no longer used.**
P20523	pontamine bond yellow 303	2965	dye			Per vendor	
P20528	PENFORD GUM 280 - BAGS	566	corn starch			Per vendor - refer to 20510	
P20530	blankophor p150	3083	stilbene dye			Per vendor - Fluorscent whitening agent. Contain phosphorus	
P20567	Covercarb HP	739	calcium carbonate		Inoganic		

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P20568	Airflex 100 HS	2668	vinylacetate copolymer	<0.5% vinyl acetate monomer		Binder for adhesives and coatings - vinyl acetate 1%, nonyl-phenol (branches ethoxyleted) 5% , 0.006% acetaldehyde. Per MSDS contains formaldehyde at 0.002%	lab evaluation
P20569	ultra gloss 90	3168	aluminum silicate powder or kaolin	trial	Inorganic	Kaolin 90 - 100% (clay), Titanium dioixe 2%	
P20570	ultra white 90	3169	Kaolin, sio3	trial	Inoganic	Kaolin 90 - 100% (clay), Titanium dioixe 2%	20611 new raw material number
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	trial		.013% free formaldehyde- arcylic polymer - chloromethyl isothiazolinone 0.1%	**This raw material is no longer used.**
P20576	chemcor emulsion	3178	ethen homopolymer emulsion	trial		vinyl acetate copolymer 53%, water 51%. CA Prop 65 Trace amounts of: formaldehyde, acetaldehyde, ethylene oxide, 1,4 dioxane. (Contact Vendor)	lab evaluation
P20290	dur-o-set elite 25-299A Plus	3226	sizing agent	trace ammonia <1 %		vinyl acetate copolymer 53%, water 51%. CA Prop 65 Trace amounts of: formaldehyde, acetaldehyde, ethylene oxide, 1,4 dioxane. - assumed formaldehyde 2.5 ppm	
P20582	Bersize 6409					0.113 % formaldehyde - Per Vendor	
P20583	hycar 26879	3225	acrylic polymer emulsion	trial		Per Vendor free formaldehyd is 0.001. The email from Mark Wolfinger indicates that this product is expect to generate formaldehde. The quanity is not quantified.	
P20590	elcofix lf liquid	3249	resin solution with 8% ethylene glycol 11-46-6	trial		Per vendor	**This raw material is no longer used.**
P20591	elcoment red RP	3250	ammonia 0.4 % 7664-41-7			Per vendor	**This raw material is no longer used.**
P20592	elcoment red nr	3251	aqueous pigment			http://www.google.com/patents?id=-dEYAAAAEBAJ&printsec=abstract&zoom=4#	**This raw material is no longer used.**
P20593	elcoment yellow pnb	3252	aqueous pigment			http://www.artiscreation.com/Color_index_names.html	**This raw material is no longer used.**
P20594	elcoment yellow yp	3253	aqueous pigment			**Pigmentdecomposition in polymers in applications at elevated temperatures.** On thermal treatment of polymers containing diarylide pigments (e.g. C.I. Pigment Yellow 13, 14, 17 and 83, C.I. Pigment Orange 13 and 34 and C.I. Pigment Red 38) above 200° C, and particularly on prolonged treatment in the higher temperature range of 240–300° C, thermal cleavage of the pigment may occur. Following extraction of the treated polymer, some degradation products could be identified as the corresponding monoazo dyes. Due to the enhanced solubility of these degraded products in various application media, the possibility of migration (bleeding and blooming) exists. Furthermore, prolonged heating in the application media at the higher temperature range leads to the release of aromatic amines, including 3,3'-dichlorobenzidine. by R. Az, B. Dewald, D. Schnaitmann **The thermal decomposition of some visual pigments** **Theodore P. Williams, Susan E. Milby*** Department of Biological Sciences and The Institute of Molecular Biophysics, Florida State University, Tallahassee, Florida 32306 U.S.A. Received 23 October 1967. Available online 14 March 2003.	**This raw material is no longer used.**
P20595	elcoment red GP	3254	aqueous pigment				**This raw material is no longer used.**

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P20597	aersol ot-75	2975	surfactant	ethanol 6-7%-lab		75% surfactant - sodium dioctyl sulfosuccinate in a mixture of 7% ethanol and water.	
P20599	perform PA8137	1481	polyacrylamide, petrol distil 30%-drainage aid	retention aid		per vendor	
P20600	elcoment violet	3259	organic pigment-30%			Per vendor	**This raw material is no longer used.**
P20601	elcoment blue	3257	pigment, copper 3 % copper compounds 20%		Assuming Inoganic	http://en.wikipedia.org/wiki/Blue Blue pigments include azurite ($Cu_3(CO_3)_2(OH)_2$), ultramarine ($Na_{8-10}Al_6Si_6O_{24}S_{2-4}$), cerulean blue (primarily cobalt (II) stanate: Co_2SnO_4), cobalt blue (cobalt(II) aluminate: $CoAl_2O_4$), and Prussian blue (milori blue: primarily $Fe_7(CN)_{18}$).	**This raw material is no longer used.**
P20602	elcoment black	3256	pigment, diethylene glycol 111-46-4 5%, carbon black 34%			http://www.chemcas.org/msds114/supplier/cas/364/107-21-1_111-46-6_1332-37-2_14807-96-6_1332-58-7_21645-51-2.asp	**This raw material is no longer used.**
P20610	sodium bicarbonate	3272	sodium bicarbonate	144-55-8		Sodium bicarbonate or sodium hydrogen carbonate is the chemical compound with the formula $NaHCO_3$. Sodium bicarbonate is a white solid that is crystalline but often appears as a fine powder. Above 70 °C, sodium bicarbonate gradually decomposes into sodium carbonate, water and carbon dioxide. The conversion is fast at 200 °C:[9] 2 NaHCO3 → Na2CO3 + H2O + CO2 Most bicarbonates undergo this dehydration reaction. Further heating converts the carbonate into the oxide (at ca. 1000 °C): Na2CO3 → Na2O + CO2 These conversions are relevant to the use of NaHCO3 as a fire-suppression agent ("BC powder") in some dry powder fire extinguishers. http://en.wikipedia.org/wiki/Sodium_bicarbonate	
P20615	kymene 821	3285	1,3 dichloropropanol-96-23-1	amine polymer		per vendor	
P20620	tronox r-pl tio2	3306	al2o3 13463-67-7 90%,alo2 1344-28-1 5%,alpo4-5%	powder	Inorganic Compund	Per vendor - titanium dioxide with aluminmum oxide and aluminmum phosphate - inorganic - No Potenital to produce formaldehyde	
P20632	hycar 26469 emulsion	2857	polymer emulsion	trial		Per vendor	**This raw material is no longer used.**
P20634	hydrasperse 90 powder	3322	Kaolin-100%	1332-58-7		Kaolin - clay product. Does not have the potenital to generate formaldehyde	lab evaluation
P20635	pergasol brown f2	3348	colorant-urea 1-2%	dye		Per vendor	**This raw material is no longer used.**
P20636	carbobond 26373	2723	acrylic polymer emulsion	trial		.045% Per vendor - Per Vendor free formaldehyd is 0.045. The email from Mark Wolfinger indicates that this product is expect to release "high levels of formaldehde generated. The quanity is not quantified.	
P20638	halopont blue rnd	3358	glycerin 1-5%. PG 1%	dye		See P20593	

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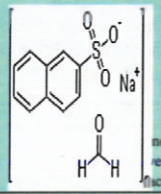
P20643	celvolit dm1831e	3392	vinyl acetate copolymer, vinyl acetate 108-05-4 0.2%	trial		Per vendor	This raw material is no longer used.
P20645	perform sp7200	3284	petrol distil 64742-47-8 32%, ethox alcohol c12-16 <2%	retention aid -acrylamide copolymer		Per vendor	This raw material is no longer used.
P20647	fennosil 515	3363	silicone dioxide solution 7631 -86-9		Inorganic	Per vendor	
P20650	vycar 450X61	3449	vinyl chloride copolymer			http://www.inchem.org/documents/sids/sids/VINYLCHL.pdf https://researchspace.auckland.ac.nz/handle/2292/2432 http://www.eco-usa.net/toxics/chemicals/vinyl_chloride.shtml	
P20651	vycar 460x49	2631	vinyl chloride copolymer			.029% per vendor	This raw material is no longer used.
P20652	vycar 460x95	3374	vinyl chloride copolymer	trial		.03 % per vendor	This raw material is no longer used.
P20657	nalco 63001	3381	lab only	trial		Only used in lab	
P20660	ultraphase size agent	3385	rosin size	aluminum sulfate 10043-01-3 3-4%		See discussion P20052	
P70249	defoamer fd-62k	86	defoamer	emulsion in water		Per vendor	
P78000	webcam fcl	1315	sodium hydroxide solution 5-15	inactive		Per vendor	This raw material is no longer used.
P78002	foamkill 639q	454	organo silicone	bp 480F <1% volatile		Per vendor - Petroleum hydrocarbon - organo silicone	
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	trial		.0009% formaldehyde per vendor	
P78019	Webco	3355	NaOH 5-15%	cleaning compound	Inorganic	Alkaline cleaning compound - NaOH 15%	
				New Chemicals			
P20584	Hycar 26083					0.008% formaldehyde - sodium dodecyl sulfate 1.5%, modified acrylic polymer - Per an email from Mark Wolfinger the raw material does have the potenital to generate formaldehyde.	
P20286	HYCAR 26707					Acrylic Polymer - Does not contain free formaldehyde, but has the potential to generate formaldehyde.	This raw material is no longer used.
P78017	prestige fc8744					Felt wash - cleaning and conditioning agent - 15% quaternaized polyamine, 15% ethoxylated alcohol (c12 - c16), sodium lauryl sulfate 5%, NaCl 1.5%, organic compounds 1.5% alkyl glycol.	
P20709	pontamine black ld liquid					No potential to generate formaldehyde based on vendor information - Azo dye 1%, urea 1%, dyes 2%,	
P20821	Pontamine Black M Lquid					No potential to generate formaldehyde based on vendor information - nickel 1 ppm, 2.4 ppm acetaldehyde	
P20791	Pontamine Black OX Liquid					No potential to generate formaldehyde based on vendor information - 1.2 ppm acetaldehyde	
P20659	Pontamine Blue Bond Liquid					No potential to generate formaldehyde based on vendor information - Direct Blue 218 12%, Lead 2.56 ppm, Cobalt 0.537 ppm, 11% amines, NaCl 1%,	

Monadnock Paper Mills
Bennington, NH
Formaldehyde Evaluation Table
Evaluation of Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Date Modified **4/3/2013**

Mat'l Code	Name	MSDS #	Content	CAS # and Application	Inorganic Compund - No Potenital to produce formaldehyde	Organic Compounds that may have potential to generate formaldehyde-basis	Comments
P20712	Pontamine Bril Violet 6B Liq 100					No potential to generate formaldehyde based on vendor information - Urea 16% (not RTAP)	
P20852	Pontamine Golden Yello RB Liquid					No potential to generate formaldehyde based on vendor information - Azo Dye - Lead 2.05 ppm	
P20827	pontamine Red Sern Concentrate					No potential to generate formaldehyde based on vendor information - Triethanol amine 4% - (RTAP)	
P20822	pontamine yellow GXG liquid					No potential to generate formaldehyde based on vendor information - Stilbene Dye stuff, Urea 22% (not RTAP); lead 2.84% .	
P20167	Ponolith Blue RDC Liquid					3.2 ppm free formaldehyde per vendor	
P20378	Ponolith Fast Blue C Liquid					No potential to generate formaldehyde based on vendor information - Copper phthalocyanine dye 1%, water 1%, disperrsing agent 5%, surfactant 5%	
P20603	Ponolith Supra Red MY					No potential to generate formaldehyde based on vendor information - sodium napthalene1%	
P20843	Ponolith Supra Red RM Liquid					No potential to generate formaldehyde based on vendor information - 1.08 ppm acetaldehyde	
P20844	Ponolith Supra Violet EB liquid					No potential to generate formaldehyde based on vendor information - 1% sodium napthalene sulfonate	
P20133	Ponolith Supra Yellow RD Liquid					No potential to generate formaldehyde based on vendor information - Azo Dye	
P20648	Fennosil ES-210					No potential to generate formaldehyde based on vendor information - Polyacrylamide co polymer	
P20639	Halopont Blue RND					 nerate formaldehyde based on vendor information e - glycerine 5%, pigment 13%; Per vendor contains acid-formaldehyde polymer but no free formaldehyde.	**This raw material was not used in 2010 or 2011. 434 pounds has been processed in 2012 through July 31st.**
P20119	Halopont Blue RNM Powder					No potential to generate formaldehyde based on vendor information - 1% Dextrin, 1% Sodium Sulfate, 1% water, 1% napthalene sulfonic acid, lead 31.7 ppm, chromium 0.729 ppm	
	Halopont Pink 2Bm Liquid				Xanthrene Dyestuff	No potential to generate formaldehyde based on vendor information - Xanthrene Dye - contains 0.53% nickel.	
P20774	Fennofix 506					No potential to generate formaldehyde based on vendor information - Cationic polyamine aqueous solution	
P77066	Spectrum RX 9100					No potential to generate formaldehyde based on vendor information - 5.5% 2 Bromo 2 Nitro Propane 1,3 Diol, 3.3% Magnesium Nitrate, 2.2% 5-Chrlor-2-methyl-4-isothiazolin-3-one, 1.7% Magnesium Chloride (no RTAP)	
	Zenix FP550					No potential to generate formaldehyde based on vendor information	

Monadnock Paper Mills
Bennington, NH
Formaldehyde Evaluation Table
Evaluation of Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Date Modified **4/3/2013**

Mat'l Code	Name	MSDS #	Content	CAS # and Application	Inorganic Compund - No Potenital to produce formaldehyde	Organic Compounds that may have potential to generate formaldehyde-basis	Comments
P78004	Protocol CB2000					Antifoamer - surfactant 60%; polymer 40%, No RTAP, No VOC)	
	Klaraid PC1190					No potential to generate formaldehyde based on vendor information	
	Klaraid CDP1337					No potential to generate formaldehyde based on vendor information - Coagulant - Aluminum chlorohydroxide 60%; Methanamine, nmethyl, polymer with chloromethul oxirane 13% (No RTAP, NO VOC)	
	PolyFloc AP1138				pg 2882. no msds in system	No potential to generate formaldehyde based on vendor information - Polyacrylamide Flocculant	
P78036	Renew SC7160					No potential to generate formaldehyde based on vendor information - NaOH 25%	**This raw material is no longer used.**
P20621	Paracol 1324A					No potential to generate formaldehyde based on vendor information - Sizing Agent Parafin Wax	
P77002	Renew SC7101					No potential to generate formaldehyde based on vendor information - NaOH 9%	**This raw material is no longer used.**
P78067	Flogard PPOR6100					No potential to generate formaldehyde based on vendor information - Water Treatment Chemical - No VOC, No RTAP	
P20667	Aquapel 566					No potential to generate formaldehyde based on vendor information - Sizing Agent - decomposition products aldehyde, CO, carboxylic acids, CO2. - Does not appear to contain any RTAPs or VOCs	
P78065	Spectrum XD 3899					No potential to generate formaldehyde based on vendor information - Biocide/slime control - 35% ammonium bromide, (No RTAP, NO VOC	
P20411	Hercobond 2000					dry strength resin/anionic polymer	**This raw material is no longer used.**
P20048	Kymene 557H					No potential to generate formaldehyde based on vendor information - Wet strength resin - 1.5% Dichoro-2-propanol - 1,3 (No RTAP)	
P20835	Perform PM 9025					No potential to generate formaldehyde based on vendor information - Silica Liquid - 100% No RTAP, No VOC	
	Amerfloc 490 Polymer					No potential to generate formaldehyde based on vendor information - 100% polymer (No RTAP) 23 hPa vapor pressure	
	Drewfloc 2444					No potential to generate formaldehyde based on vendor information - Flocculant - currently being evaluated - Aliphatic hydrocarbon 30%, polymber 5%, alcohol, c12-18 ethoxylates alcohols 5% (No RTAP) 35 hPa vapor pressure	
P78105	Chargepac 55					No potential to generate formaldehyde based on vendor information - Coagulant - Inorganic Salt 60% (No RTAP, NO VOC)	
P78066	Kybreak 300					No potential to generate formaldehyde based on vendor information - Repulping aid - Sodium persulfate 80% rtap, sodium carbonate 15%	
P78142	Drewfloc 2488					No potential to generate formaldehyde based on vendor information - Distillate petroleum 30%, alcohols c12-c18 ethoxylated 5% (35 hpa vapor pressure)	

Monadnock Paper Mills
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Formaldehyde Evaluation Table
Evaluation of Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Date Modified **4/3/2013**

Mat'l Code	Name	MSDS #	Content	CAS # and Application	Inorganic Compund - No Potenital to produce formaldehyde	Organic Compounds that may have potential to generate formaldehyde-basis	Comments
P20834	GR-122 MATTE CLEAR		Ingredients: Cas # Chemical Name 7732185 | Water 1332587 | Aluminum Silicate Confidential | Vinyl chloride copolymer 1111109-77-4 | Propylene base glycol ether			0.032% formaldehyde	
P20830	AEROSOL® 501 Surfactant		Sulfosuccinate half ester salt - 15-40 % Alcohols, C9-11- iso-, C10: 0.5 - 1.5%	68526-85-2		No potential to generator formaldehyde based on vendor information	
P20812	BYK-DYNWET 800		Silicone Free Surface Additive for Aqueous Systems; Alcohol alkoxylates			No potential to generator formaldehyde based on vendor information	
P20806	Fretex SSc Foramdehyde Scanvenger		**Chemical Name** / **CAS Number** / **Weight %** Propanedioic acid, 1,3-bis[2-(2-hydroxyethoxy)ethyl] ester / Proprietary / 60-100 Diethylene glycol / 0000111-46-6 / 5-10 4-Toluenesulfonic Acid / 0000104-15-4 / 0.5-1.5			Chemical is designed to react with formaldehyde. Does not contain formaldehyde.	
P20809	Joncryl 98		**CAS Number** / **Content (W/W)** / **Chemical name** 40.0 - 50.0 % Ammonium salt of modified styrene acrylic polymers 7732-18-5 40.0 - 50.0 % Water 84133-50-6 1.0 - 3.0 % Alcohols, C12-14-secondary, ethoxylated 1336-21-6 0.1 - 1.0 % Ammonium hydroxide			No potenital to generate formaldehyde based on vendor information	
P20811	Joncryl flex 5000-A		40.0 - 50.0 % Ammonium salt of modified acrylic copolymers 1.0 - 5.0 % Proprietary Component			No potenital to generate formaldehyde based on vendor information	
P20802	Talc		a hydrous magnesium silicate;	CAS #14807-96-6		No potenital to generate formaldehyde based on vendor information	
P20112	CPC Blue		Pigment			No potenital to generate formaldehyde based on vendor information	
P20799	Kronos Titanium Dioxide Pigment		Titanium Dioxide white pigment			No potenital to generate formaldehyde based on vendor information	
P20795	Cationic Polymer Solution		Polydiallyldimethylammonium chloride (Polydadmac)			No potenital to generate formaldehyde based on vendor information	

Monadnock Paper Mills
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Table1C
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025	0.5506875	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039	2.609451	39 ppm per vendor
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	20.52	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025	0.0004825	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013	60.3213663	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025	0.0110825	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001	0.0237296	10 ppm per vendor
P20158	VYCARTIN 842-30 LATEX	2369	Vinylchloride co polymner 0.032% formaldehyde	DE	1225	0.00032	0.392032	Per vendor information the raw material contains 0.032% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	84	0.0000032	0.000268557	Per MSDS 3.2 ppm formaldehyde. - Usage from July 2012 report is scaled for 12 months.
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005	14.7945	Per vendor information the raw material contains 0.050% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.02695	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A - No Longer Used as of 2012	2704	vinylacetate copolymer	CTR	4534	0.0000025	0.011335	trace amount per vendor-2.5 ppm assumed
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025	0.006775	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	327	0.0004	0.130636	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid - No Longer Used as of 2012	2585	stilbene flourescent	CTR	1257	0.00001	0.01257	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039	10.02612	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.

Monadnock Paper Mills
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Table1C
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20568	Airflex 100 HS - No longer Used as of 2012	2668	vinylacetate copolymer	CTR	89871	0.0000025	0.22	Binder for adhesives and coatings - vinyl acetate 1%, nonyl-phenol (branches ethoxyleted) 5% , 0.006% acetaldehyde. Per MSDS contains formaldehyde at 0.002%
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	CTR	1700	0.00013	0.221	0.013% free form - per vnedor
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013	3.12741	0.113% per vendor
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001	7.97738	0.001% per vendor
P20584	Hycar 26083		acrylic polymer emulsion	DE	0	0.00008	0	0.008% per vendor - not used in 2010
P20636	carbobond 26373	2723	acrylic polymer emulsion	DE	30867	0.00045	13.89015	.045% Per vendor The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20650	vycar 450X61	3449	vinyl chloride copolymer	CTR	9330	0.0003	2.799	http://www.inchem.org/documents/sids/sids/VINYLCHL.pdf https://researchspace.auckland.ac.nz/handle/2292/2432 http://www.eco-usa.net/toxics/chemicals/vinyl_chloride.shtml
P20651	vycar 460x49	2631	vinyl chloride copolymer	CTR	26193	0.00029	7.59597	0.029% per vendor
P20652	vycar 460x95	3374	vinyl chloride copolymer	CTR	8817	0.0003	2.6451	0.03 % per vendor
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	0.030924	0.0009% per vendor
						Total	147.95	

Operation	2010 lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	8.59	1	8.59
Dry End Emission	111.04	0.23 Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	69.63
Coater Emissions	28.31	1	28.31
Total	147.95		106.54

Monadnock Paper Mills - Paper Machine 1
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may

		lbs/hr Formaldehyde Rates for Products - Paper Machine #1												
Mat'l Code	**Name**	1813-104	1811-082	1154-046	1810-095	1291-042	1278-039	9461-202	5201-070	2101-074	9412-158	9403-110	1739-074	1733-143
P20051	LEVOGEN PM DYE FIXATIVE					0.0001734		0.0002944	0.00071156	0.0004932	0.00028655	0.00032455	0.00124013	
P20075	LATEX 25-1846 (52%)													
P20085	SUNSIZE 4133 (25%)													0.0079812
P20092	PONT. BLUE SP LIQUID DYE													
P20097	HYCAR 26717 LATEX (43%)													0.0929477
P20121	SUPRA BLUE RB PONOLITH LIQUID							2.944E-06			7.1638E-08	4.62484E-07	0.00028936	
P20140	PONOLITH SUPRA BLACK LIQUID DYE							1.855E-05		0.00059184			0.00019842	
P20180	VYCAR 460 X 120 EMULSION													
P20182	25-2819 LATEX					0.000801975	0.000704							
P20317	RESYN 25-1151 (51%)													
P20422	hycar 26391	0.2090556	0.2076282	0.072599	0.217035									
P20582	bersize 6409													
P20583	hycar 26879													
P20584	Hycar 26083													
P78017	prestige fc8744	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08

Monadnock Paper Mills - Paper Machine 1
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	5159-053	1124-033	2046-076	2074-120	1821-095
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025					
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039					
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	0.0697524				
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025					
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013					
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025					
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001					
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005					
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.001571				
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025					
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039					0.1833156
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013			0.0024494	0.0023845	
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001			0.0062805	0.006114	
P20584	Hycar 26083		acrylic polymer emulsion	DE	0	0.00008		0.05006			
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08

Monadnock Paper Mills - Paper Machine 1
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may

Mat'l Code	Name	1711-143	5183-060	5159-053	1736-062	1715-075	1706-097	1723-097	1806-044
P20051	LEVOGEN PM DYE FIXATIVE								
P20075	LATEX 25-1846 (52%)		0.0410319						
P20085	SUNSIZE 4133 (25%)	0.0082308	0.0441882	0.0697524	0.00399				
P20092	PONT. BLUE SP LIQUID DYE								
P20097	HYCAR 26717 LATEX (43%)	0.09585453				0.1629	0.153894	0.14477288	0.04980625
P20121	SUPRA BLUE RB PONOLITH LIQUID								
P20140	PONOLITH SUPRA BLACK LIQUID DYE								
P20180	VYCAR 460 X 120 EMULSION								
P20182	25-2819 LATEX			0.001571					
P20317	RESYN 25-1151 (51%)								
P20422	hycar 26391								
P20582	bersize 6409								
P20583	hycar 26879								
P20584	Hycar 26083								
P78017	prestige fc8744	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08

Monadnock Paper Mills - Paper Machine 1 - Stack Testing Emission Factor Incorporated in Highlighted Blue Calculations
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	Total Formaldehyde (lbs/year)	5159-053	1124-033	2046-076	2074-120	1821-095	1813-104	1811-082	1154-046	1810-095
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025	0.5506875									
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039	2.609451									
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	20.52	0.0697524								
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025	0.0004825									
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013	60.3213663									
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025	0.0110825									
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001	0.0237296									
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005	14.7945									
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.02695	0.001571								
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025	0.006775									
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039	10.02612					0.04216259	0.048082788	0.047754486	0.072599	0.04991805
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013	3.12741			0.0024494	0.0023845					
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001	7.97738			0.0062805	0.006114					
P20584	Hycar 26083		acrylic polymer emulsion	DE	0	0.00008	0		0.05006							
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	0.030924	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08
							147.95	0.07132346	0.05006006	0.00872996	0.0084985	0.04216265	0.048082852	0.04775455	0.072599	0.049918114

Operation	2010 lbs/year	Correction Factor
Wet End Emissions	8.59	1
Dry End Emission	56.88	1
Coater Emissions	28.31	1
Dry End Emission:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097		0.23
Total with stack test results	93.78	

Monadnock Paper Mills - Paper Machine 1 - Stack Testing Emission Factor Incorporated in Highlighted Blue Calculations
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

								lbs/hr Formaldehyde Rates for Products - Paper Machine #1									
Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	Total Formaldehyde (lbs/year)	1291-042	1278-039	9461-202	5201-070	2101-074	9412-158	9403-110	1739-074	1733-143	1711-143
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025	0.5506875	0.0001734		0.0002944	0.00071156	0.0004932	0.00028655	0.00032455	0.00124013		
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039	2.609451										
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	20.52									0.0079812	0.0082308
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025	0.0004825										
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013	60.3213663									0.0929477	0.09585453
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025	0.0110825			2.944E-06			7.1638E-08	4.62484E-07	0.00028936		
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001	0.0237296			1.855E-05		0.00059184			0.00019842		
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005	14.7945										
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.02695	0.000801975	0.000704								
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025	0.006775										
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039	10.02612										
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013	3.12741										
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001	7.97738										
P20584	Hycar 26083		acrylic polymer emulsion	DE	0	0.00008	0										
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	0.030924	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08
							147.95	0.000975439	0.000704	0.000316	0.00071163	0.0010851	0.00028669	0.000325076	0.00172797	0.100929	0.10408539

Operation	2010 lbs/year	Correction Factor
Wet End Emissions	8.59	1
Dry End Emission	56.88	1
Coater Emissions	28.31	1
Dry End Emission:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097		0.23
Total with stack test results	93.78	

Monadnock Paper Mills - Paper Machine 1 - Stack Testing Emission Factor Incorporated in Highlighted Blue Calculations
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

Mat'l Code	Name	MSDS #	Content	Application	Lbs used 2010	Factor	Total Formaldehyde (lbs/year)	5183-060	5159-053	1736-062	1715-075	1706-097	1723-097	1806-044
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025	0.5506875							
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039	2.609451	0.0410319						
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	20.52	0.0441882	0.0697524	0.00399				
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025	0.0004825							
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013	60.3213663				0.0375	0.0353956	0.03329776	0.04980625
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025	0.0110825							
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001	0.0237296							
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005	14.7945							
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.02695		0.001571					
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025	0.006775							
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039	10.02612							
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013	3.12741							
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001	7.97738							
P20584	Hycar 26083		acrylic polymer emulsion	DE	0	0.00008	0							
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	0.030924	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08
							147.95	0.0852202	0.0713235	0.0039901	0.0374776	0.0353957	0.03329783	0.04980631

Operation	2010 lbs/year	Correction Factor
Wet End Emissions	8.59	1
Dry End Emission	56.88	1
Coater Emissions	28.31	1
Dry End Emission:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097		0.23
Total with stack test results	93.78	

Monadnock Paper Mills - Paper Machine 2
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

					lbs/hr Formaldehyde Rates for						
Mat'l Code	**Name**	**Content**	**Application**	**Factor**	2046-076	2074-120	1813-104	1291-042	1278-039	9461-202	9412-158
P20051	LEVOGEN PM DYE FIXATIVE	polyhydroximide 50-60 %	WE	0.000025				0.0001154		0.0002224	0.0002763
P20075	LATEX 25-1846 (52%)	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	0.000039							
P20085	SUNSIZE 4133 (25%)	stearylated melamine water repellant	DE	0.0006							
P20092	PONT. BLUE SP LIQUID DYE	lead 2.7 ppm,nickel 2.33 ppm	WE	0.0000025							
P20097	HYCAR 26717 LATEX (43%)	acrylic polymer emulsion	DE	0.00013							
P20121	SUPRA BLUE RB PONOLITH LIQUID	trace cu, formaldehyde	WE	0.0000025						2.224E-06	6.908E-08
P20140	PONOLITH SUPRA BLACK LIQUID DYE	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	0.00001						1.401E-05	
P20180	VYCAR 460 X 120 EMULSION	vinyl emulsion	CTR	0.0005							
P20182	25-2819 LATEX	cross linking agent	DE	0.0000025				0.0005337	0.0005268		
P20317	RESYN 25-1151 (51%)	VA copolymer, acetakdehyde 0.1 %	CTR	0.0000025							
P20422	hycar 26391	acrylic emulsion	DE	0.00039			0.170586				
P20582	bersize 6409	sizing agent	DE	0.00013	0.00156078	0.0015137					
P20583	hycar 26879	acrylic polymer emulsion	WE/CTR	0.00001	0.004002	0.0038813					
P20584	Hycar 26083	acrylic polymer emulsion	DE	0.00008							
P78017	prestige fc8744	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	0.000009	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08

Monadnock Paper Mills - Paper Machine 2
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may

		Products - Paper Machine #2						
Mat'l Code	**Name**	9403-110	5183-060	1723-097	1806-044	7677-067	7690-146	7694-146
P20051	LEVOGEN PM DYE FIXATIVE	0.0002452				0.0001324	0.0002223	0.0002316
P20075	LATEX 25-1846 (52%)		0.0250848					
P20085	SUNSIZE 4133 (25%)		0.0270144					
P20092	PONT. BLUE SP LIQUID DYE							
P20097	HYCAR 26717 LATEX (43%)			0.0765824	0.0406575			
P20121	SUPRA BLUE RB PONOLITH LIQUID	3.494E-07				2.647E-08		
P20140	PONOLITH SUPRA BLACK LIQUID DYE							
P20180	VYCAR 460 X 120 EMULSION							
P20182	25-2819 LATEX							
P20317	RESYN 25-1151 (51%)							
P20422	hycar 26391							
P20582	bersize 6409							
P20583	hycar 26879							
P20584	Hycar 26083							
P78017	prestige fc8744	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08

Monadnock Paper Mills Paper Machine 2 - Stack Testing Emission Factor Incorporated in Highlighted Blue Calculations
Bennington, NH
Formaldehyde Potential Summary Table
Processed Raw Materials used in 2010 which may contain or generate formaldehyde.

					lbs/hr Formaldehyde Rates for Products - Paper Machine #2													
Mat'l Code	**Name**	**Content**	**Application**	**Factor**	2046-076	2074-120	1813-104	1291-042	1278-039	9461-202	9412-158	9403-110	5183-060	1723-097	1806-044	7677-067	7690-146	7694-146
P20051	LEVOGEN PM DYE FIXATIVE	polyhydroximide 50-60 %	WE	0.000025				0.0001154		0.0002224	0.0002763	0.0002452				0.0001324	0.0002223	0.0002316
P20075	LATEX 25-1846 (52%)	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	0.000039									0.0250848					
P20085	SUNSIZE 4133 (25%)	stearylated melamine water repellant	DE	0.0006									0.0270144					
P20092	PONT. BLUE SP LIQUID DYE	lead 2.7 ppm,nickel 2.33 ppm	WE	0.0000025														
P20097	HYCAR 26717 LATEX (43%)	acrylic polymer emulsion	DE	0.00013										0.0765824	0.0406575			
P20121	SUPRA BLUE RB PONOLITH LIQUID	trace cu, formaldehyde	WE	0.0000025						2.224E-06	6.908E-08	3.494E-07				2.647E-08		
P20140	PONOLITH SUPRA BLACK LIQUID DYE	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	0.00001						1.401E-05								
P20180	VYCAR 460 X 120 EMULSION	vinyl emulsion	CTR	0.0005														
P20182	25-2819 LATEX	cross linking agent	DE	0.0000025				0.0005337	0.0005268									
P20317	RESYN 25-1151 (51%)	VA copolymer, acetakdehyde 0.1 %	CTR	0.0000025														
P20422	hycar 26391	acrylic emulsion	DE	0.00039			0.0392348											
P20582	bersize 6409	sizing agent	DE	0.00013	0.00156078	0.0015137												
P20583	hycar 26879	acrylic polymer emulsion	WE/CTR	0.00001	0.004002	0.0038813												
P20584	Hycar 26083	acrylic polymer emulsion	DE	0.00008														
P78017	prestige fc8744	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	0.000009	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08	6.4E-08
				Total lbs/hr	0.00556284	0.005395	0.0392348	0.0006492	0.0005268	0.0002387	0.0002764	0.0002456	0.0520993	0.0765824	0.0406576	0.0001324	0.0002224	0.0002316

Operation	**No Correction Factor**
Wet End Emissions	1
Dry End Emission	1
Coater Emissions	1
Total	

Year	Annual Formaldehyde Emissions (lbs/year) Provided on Emissions Report	Revised Emissions Based on 2012 Formaldehyde Evaluation	Comments
2005	158.3	2119.87	
2006	6496.71	154.59	Ceased use of the Piomelamine resin in 2005 which contained 4% formaldehyde.
2007	7826.2	185.80	
2008	9,644.98	179.51	Developed formaldehyde free wall paper.
2009	9,307.91	29.97	
2010	9,101.97	93.78	
2011	2897.95	193.71	Increase in production in 2011 accounts for the increase in formaldehyde emissions.
Percent Reduction of Formaldehde 2005-2011		90.86%	

Monadnock Paper Mills, Bennington, NH
Year:2005
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20049	PARAMEL HE-1 MELAMINE RESIN (10%)	1236	Melamine formaldehyde resin	WE	51772	0.04	2070.88	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	25288	0.000025	0.6322	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	80080	0.000039	3.12312	39 ppm per vendor
P20077	CYMEL P-707 (80%)	2299	Melamine formaldehyde resin <0.4 %	WE	1516	0.004	6.064	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	11976	0.0006	7.1856	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	309	0.0000025	0.0007725	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	881087	0.00013	114.54131	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	5951	0.0000025	0.0148775	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	779	0.00001	0.00779	10 ppm per vendor
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	2	0.0000032	0.0000064	Per MSDS 3.2 ppm formaldehyde.
P20174	DUR-SET ELITE 33 (51%)	2077	EVA copolymer	DE	5145	0.0000200	0.1029	
P20182	25-2819 LATEX	3057	cross linking agent	DE	772772	0.0000025	1.93193	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	56246	0.0000025	0.140615	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	120	0.0004	0.048	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid	2585	stilbene flourescent	CTR	6269	0.00001	0.06269	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	37125	0.00039	14.47875	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
						Total	2219.21	

Operation	Potential lbs/year	Adjusted Emissions based on 2013 Stack Testing (lbs/yr)
Wet End Emissions	2077.60	2077.60
Dry End Emission (1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097 utilized a correction factor 0.23)	141.41	42.07
Coater Emissions	0.20	0.20
No Category	0.00	0.00
Total	2219.21	2119.87

Monadnock Paper Mills, Bennington, NH
Year:2006
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20049	PARAMEL HE-1 MELAMINE RESIN (10%)	1236	Melamine formaldehyde resin	WE	1741	0.04	69.64	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	18710	0.000025	0.46775	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	26187	0.000039	1.021293	39 ppm per vendor
P20077	CYMEL P-707 (80%)	2299	Melamine formaldehyde resin <0.4 %	WE	14842	0.004	59.368	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	9634	0.0006	5.7804	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	289	0.0000025	0.0007225	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	521835	0.00013	67.83855	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4045	0.0000025	0.0101125	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	767	0.00001	0.00767	10 ppm per vendor
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	8203	0.0000032	0.0262496	Per MSDS 3.2 ppm formaldehyde.
P20174	DUR-SET ELITE 33 (51%)	2077	EVA copolymer	DE	4338	0.0000200	0.08676	
P20182	25-2819 LATEX	3057	cross linking agent	DE	262956	0.0000025	0.65739	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	18093	0.0000025	0.0452325	trace amount per vendor-2.5 ppm assumed
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	173	0.0000025	0.0004325	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	41	0.0004	0.0164	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid	2585	stilbene flourescent	CTR	2588	0.00001	0.02588	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	20229	0.00039	7.88931	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20568	Airflex 100 HS		vinylacetate copolymer	DE	483	0.0000025	0.0012075	trace amount -2.5 ppm assumed
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	CTR	166	0.00013	0.02158	0.013% free form - per vnedor
						Total	212.90	

Operation	lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	129.52	1	129.52
Dry End Emission	83.29	0.23 Factor for Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	24.98
Coater Emissions	0.09	1	0.09
No Category	0.00	1	0.00
Total	212.90		154.59

Monadnock Paper Mills, Bennington, NH
Year:2007
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20049	PARAMEL HE-1 MELAMINE RESIN (10%)	1236	Melamine formaldehyde resin	WE	663	0.04	26.52	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	32961	0.000025	0.824025	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	43086	0.000039	1.680354	39 ppm per vendor
P20077	CYMEL P-707 (80%)	2299	Melamine formaldehyde resin <0.4 %	WE	22880	0.004	91.52	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	11625	0.0006	6.975	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	510	0.0000025	0.001275	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	805967	0.00013	104.77571	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace eu, formaldehyde	WE	6107	0.0000025	0.0152675	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	416	0.00001	0.00416	10 ppm per vendor
P20158	VYCARTIN 842-30 LATEX	2369	Vinylchloride co polymner 0.032% formaldehyde	DE	49174	0.00032	15.73568	Per vendor information the raw material contains 0.032% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	241	0.0000032	0.0007712	Per MSDS 3.2 ppm formaldehyde
P20174	DUR-SET ELITE 33 (51%)	2077	EVA copolymer	DE		0.0000200	0	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	25731	0.0005	12.8655	Per vendor information the raw material contains 0.050% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20182	25-2819 LATEX	3057	cross linking agent	DE	173651	0.0000025	0.4341275	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	33463	0.0000025	0.0836575	trace amount per vendor-2.5 ppm assumed
P20296	piomel 100-7							
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	874	0.0000025	0.002185	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	167	0.0004	0.0668	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid	2585	stilbene flourescent	CTR	821	0.00001	0.00821	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	37206	0.00039	14.51034	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20568	Airflex 100 HS		vinylacetate copolymer	DE	483	0.0000025	0.0012075	trace amount -2.5 ppm assumed
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	CTR	10972	0.00013	1.42636	0.013% free form - per vnedor
P20582	bersize 6409	3226	sizing agent	DE	1323	0.00013	0.17199	0.13% per vendor
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	2591	0.00001	0.02591	0.001% per vendor
						Total	277.65	

Operation	lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	118.91	1	118.91
Dry End Emission	144.35	0.23 Factor for Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	52.50
Coater Emissions	14.39	1	14.39
No Category	0.00	1	0.00
Total	277.65		185.80

Monadnock Paper Mills, Bennington, NH
Year:2008
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20049	PARAMEL HE-1 MELAMINE RESIN (10%)	1236	Melamine formaldehyde resin	WE	237	0.04	9.48	
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	22028	0.000025	0.5507	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	66909	0.000039	2.609451	39 ppm per vendor
P20077	CYMEL P-707 (80%)	2299	Melamine formaldehyde resin <0.4 %	WE	19041	0.004	76.164	
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	34200	0.0006	20.52	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	193	0.0000025	0.0004825	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	464011	0.00013	60.32143	Per vendor information the raw material contains 0.013% free formaldehyde The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	4433	0.0000025	0.0110825	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2373	0.00001	0.02373	10 ppm per vendor
P20158	VYCARTIN 842-30 LATEX	2369	Vinylchloride co polymner 0.032% formaldehyde	DE	1225	0.00032	0.392	Per vendor information the raw material contains 0.032% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	550	0.0000032	0.00176	Per MSDS 3.2 ppm formaldehyde.
P20174	DUR-SET ELITE 33 (51%)	2077	EVA copolymer	DE	4147	0.0000200	0.08294	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	29589	0.0005	14.7945	Per vendor information the raw material contains 0.050% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20182	25-2819 LATEX	3057	cross linking agent	DE	10780	0.0000025	0.02695	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	4534	0.0000025	0.011335	trace amount per vendor-2.5 ppm assumed
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	2710	0.0000025	0.006775	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	327	0.0004	0.1308	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid	2585	stilbene flourescent	CTR	1257	0.00001	0.01257	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	25708	0.00039	10.02612	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20568	Airflex 100 HS		vinylacetate copolymer	DE	89871	0.0000025	0.2246775	trace amount -2.5 ppm assumed
P20571	hycar 2671	2653	acrylic emulsion < 059 % formaldehyde	CTR	1700	0.00013	0.221	0.013% free form - per vendor
P20582	bersize 6409	3226	sizing agent	DE	24057	0.00013	3.12741	0.113% per vendor
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	797738	0.00001	7.97738	0.001% per vendor
P20636	carbobond 26373	2723	acrylic polymer emulsion	DE	30867	0.00045	13.89015	.045% Per vendor The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20650	vycar 450X61	3449	vinyl chloride copolymer	CTR	9330	0.0003	2.799	http://www.inchem.org/documents/sds/sds/VINYLCHL.pdf https://researchspace.auckland.ac.nz/handle/2292/2432 http://www.eco-usa.net/toxics/chemicals/vinyl_chloride.shtml
P20651	vycar 460x49	2631	vinyl chloride copolymer	CTR	26193	0.00029	7.59597	0.029% per vendor
P20652	vycar 460x95	3374	vinyl chloride copolymer	CTR	8817	0.0003	2.6451	0.03 % per vendor
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	3436	0.000009	0.030924	0.0009% per vendor
						Total	233.68	

Operation	lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	94.24	1	94.24
Dry End Emission	111.35	0.23 Factor for Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	57.18
Coater Emissions	28.09	1	28.09
No Category	0.00	1	0.00
Total	233.68		179.51

Monadnock Paper Mills, Bennington, NH
Year:2009
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	6016	0.000025	0.1504	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	18719	0.000039	0.730041	39 ppm per vendor
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	5104	0.0006	3.0624	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	47	0.0000025	0.0001175	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	37620	0.00013	4.8906	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	1038	0.0000025	0.002595	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	7679	0.00001	0.07679	10 ppm per vendor
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	2	0.0000032	0.0000064	Per MSDS 3.2 ppm formaldehyde .
P20174	DUR-SET ELITE 33 (51%)	2077	EVA copolymer	DE	488	0.0000200	0.00976	
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	3859	0.0005	1.9295	Per vendor information the raw material contains 0.050% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20182	25-2819 LATEX	3057	cross linking agent	DE	14821	0.0000025	0.0370525	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	1114	0.0000025	0.002785	trace amount per vendor-2.5 ppm assumed
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	1894	0.0000025	0.004735	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	97	0.0004	0.0388	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20416	leucophor fts liquid	2585	stilbene flourescent	CTR	159	0.00001	0.00159	10 ppm per vendor
P20422	hycar 26391	3082	acrylic emulsion	DE	38597	0.00039	15.05283	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolffinger.
P20582	bersize 6409	3226	sizing agent	DE	8204	0.00013	1.06652	0.113% per vendor
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	457733	0.00001	4.57733	0.001% per vendor
P20636	carbobond 26373	2723	acrylic polymer emulsion	DE	12491	0.00045	5.62095	.045% Per vendor The product does have the potential to generate high levels formaldehyde per email from Mark Wolffinger.
P20650	vycar 450X61	3449	vinyl chloride copolymer	CTR	5123	0.0003	1.5369	http://www.inchem.org/documents/sids/sids/VINYLCHI.pdf https://researchspace.auckland.ac.nz/handle/2292/2432 http://www.eco-usa.net/toxics/chemicals/vinyl_chloride.shtml
P20651	vycar 460x49	2631	vinyl chloride copolymer	CTR	16183	0.00029	4.69307	0.029% per vendor
P20652	vycar 460x95	3374	vinyl chloride copolymer	CTR	5871	0.0003	1.7613	0.03 % per vendor
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	10349	0.000009	0.093141	0.0009% per vendor
						Total	45.34	

Operation	lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	4.90	1	4.90
Dry End Emission	30.50	0.23 Factor for Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	15.14
Coater Emissions	9.93	1	9.93
No Category	0.00	1	0.00
Total	45.33		29.97

Monadnock Paper Mills, Bennington, NH
Year:2011
Formaldehyde Potential Summary Table
Processed Raw Materials used in which may contain or generate formaldehyde.

Revised Emissions
7/7/2012

Mat'l Code	Name	MSDS #	Content	Application	Lbs used	Factor	Total Formaldehyde (lbs/year)	Organic Compounds that may have potential to generate formaldehyde-basis
P20051	LEVOGEN PM DYE FIXATIVE	1547	polyhydroximide 50-60 %	WE	14790	0.000025	0.36975	Levogen PM contains less than 25 ppm formaldehyde per vendor review.
P20075	LATEX 25-1846 (52%)	326	EVA copolymer,hcho 391 ppm,acetaldehyde 6ppm,acrylamide NMA	DE	95925	0.000039	3.741075	39 ppm per vendor
P20085	SUNSIZE 4133 (25%)	1942	stearylated melamine water repellant	DE	9587	0.0006	5.7522	.06 pr vendor
P20092	PONT. BLUE SP LIQUID DYE	1260	lead 2.7 ppm,nickel 2.33 ppm	WE	47	0.0000025	0.0001175	2.5 ppm per vendor
P20097	HYCAR 26717 LATEX (43%)	2097	acrylic polymer emulsion	DE	249770	0.00013	32.4701	Per vendor information the raw material contains 0.013% free formaldehyde. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20121	SUPRA BLUE RB PONOLITH LIQUID	1365	trace cu, formaldehyde	WE	2256	0.0000025	0.00564	2.5 ppm per vendor
P20140	PONOLITH SUPRA BLACK LIQUID DYE	1723	carbon black, DEG 3-7% 111-46-6,formaldehyde 10 ppm	WE	2442	0.00001	0.02442	10 ppm per vendor
P20158	VYCARTIN 842-30 LATEX	2369	Vinylchloride co polymner 0.032% formaldehyde	DE	228007	0.00032	72.96224	Per vendor information the raw material contains 0.032% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20167	Ponolith Blue RDC Liquid	2534	Copper Phthalocyanine Dyestudd	WE	150	0.0000032	0.00048	Per MSDS 3.2 ppm formaldehyde.
P20180	VYCAR 460 X 120 EMULSION	2486	vinyl emulsion	CTR	9283	0.0005	4.6415	Per vendor information the raw material contains 0.050% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20182	25-2819 LATEX	3057	cross linking agent	DE	68033	0.0000025	0.1700825	trace amount per vendor-2.5 ppm assumed
P20290	dur-o-set elite 25-299A	2704	vinylacetate copolymer	CTR	644	0.0000025	0.00161	trace amount per vendor-2.5 ppm assumed
P20317	RESYN 25-1151 (51%)	3026	VA copolymer, acetakdehyde 0.1 %	CTR	3381	0.0000025	0.0084525	trace amount per vendor-2.5 ppm assumed
P20406	CARBOPOL EP-2 TRIAL	1770	acrylic emulsion copolymer	DE	167	0.0004	0.0668	Per vendor information the raw material contains 0.040% free formaldehyde. The product does not have the potential to generate formaldehyde per email from Mark Wolffinger.
P20422	hycar 26391	3082	acrylic emulsion	DE	787671	0.00039	307.19169	0.039 % free formaldehyde per vendor. The product does have the potential to generate high levels formaldehyde per email from Mark Wolfinger.
P20571	hycar 2671	2653	acrylic emulsion <.059 % formaldehyde	CTR	150	0.00013	0.0195	0.013% free form - per vnedor
P20582	bersize 6409	3226	sizing agent	DE	10497	0.00013	1.36461	0.113% per vendor
P20583	hycar 26879	3225	acrylic polymer emulsion	WE/CTR	2593520	0.00001	25.9352	0.001% per vendor
P78017	prestige fc8744	3351	felt wash-polyhydroxyalkylene dimethylammoniumchloride-25988-970 10-30% amylase 7-13% 9000-90-2,alcohold c12-14 7-13% 68439-50-9,sodium lauryl sulfate 151-21-3 1-55	WE	57982	0.000009	0.521838	0.0009% per vendor
						Total	455.25	

Operation	lbs/year	Correction Factor Developed from 2000 Stack Testing	Adjusted Emissions
Wet End Emissions	26.86	1	26.86
Dry End Emission	423.72	0.23 Factor for Paper Grades:1821-095,1813-104,1811-082, 1810-095, 1715-075,1706-097,1723-097	162.18
Coater Emissions	4.67	1	4.67
No Category	0.00	1	0.00
Total	455.25		193.71