



HOWARD COUNTY DEPARTMENT OF FIRE AND RESCUE SERVICES

6751 Columbia Gateway Drive, Suite 400, Columbia, Maryland 21046
410-313-6000

JOHN S. BUTLER, FIRE CHIEF • ALLAN H. KITTLEMAN, COUNTY EXECUTIVE

TO: Lonnie R. Robbins, Chief Administrative Officer

FROM: John S. Butler, Fire Chief

SUBJECT: Testimony on Council Bill No. 8-2016

DATE: December 19, 2016

Earlier this year, the Howard County Council heard, and ultimately approved, the proposed local amendments to NFPA 1, which had undergone numerous updates and significant changes since the edition that *was* being used (2006 edition) had been adopted. These amendments, outlined in Title 17, Section 104 which serves as the 'Howard County Fire Prevention Code' provide the framework that enables the Office of the Fire Marshal (OFM) to maintain the safe environment and quality of life we have grown to expect for our community.

In an effort to remain a leader and model for public service organizations on a national level, the locally adopted amendments to the Fire Prevention Code included several new programs. One of these initiatives was the Hazardous Materials Permitting Program outlined in subsection 60.1.

The Department of Fire and Rescue Services (DFRS) recognizes its role to respond to, as well as safely and efficiently mitigate emergencies at any and all occupancies, to include those that utilize and store hazardous materials. While these substances are typically responsibly used and stored, such materials have the propensity to complicate response and increase hazards to responders, the occupancy itself, and the surrounding community, under emergency circumstances. Having a comprehensive knowledge of what specific hazards exist at various locations equips DFRS with the tools necessary to effect the best possible disposition of such emergencies.

Furthermore, in an effort to remain commensurate with the inherent intent of a Fire *Prevention* Code, this new program sets out to work hand in hand with our business partners throughout the county for incident preparation *prior* to occurrence. These permits enable business owners to walk their facility with hazardous materials trained professionals from OFM in order to collectively ensure proper storage, enhance employee safety, and ultimately enrich emergency response capabilities.

Over the past several months, a tremendous amount of work to implement this new program has taken place. Through this work, refinements to the initial language has been identified that we feel will maintain the integrity of the program while actually lessening the burden the current language places on many of our business partners.



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The first four permit classes (Types I-IV) are based on a list of 355 Extremely Hazardous Substances that the Environmental Protection Agency has identified as key hazards. While a Type I permit mirrors the federal and state requirements currently in place for these substances, Types II-IV are intended to capture information on the same chemicals, but at quantities that do not reach the federally mandated minimums.

Out of the 355 substances, thirty-two (32) of them have reportable quantity minimums of only ten pounds or less. These substances present hazards significant enough that such a small amount, in some cases not much more than an equivalent size gallon jug of water, would require state level reporting. Our intent was to have thresholds set at the intermediate permit levels such that small amounts of these substances were still identified.

Having said this, we do not feel it is prudent to place the same encumbrance on our business partners that utilize or store small quantities of the other 323 substances as the language currently does. The aim of this revision is to refine the smaller details of the program so as to narrow the focus on the most hazardous substances, in turn relieving many in our business community from falling under the same requirements for substances that do not present the same level of risk.

This revision successfully preserves the intended level of preparation and safety that this program intended. It also demonstrates a steadfast commitment to our valued business partners that this undertaking is truly meant to be a cooperative effort.

Synopsis of Proposed Changes

NFPA 1 discusses hazardous materials in Chapter 60, which is where our local amendments were placed. However, in Chapter 1, Section 12, this code specifically discussed the need for permits for hazardous materials. Lines 24-26 on the first page were added to place a reference to hazardous materials permits in the earlier section as well.

The language on page 2 as it currently exists with regards to permits simply references the requirements set forth in the Emergency Planning and Community Right To Know Act, 42 USC. This reference may in fact be too broad to accurately capture the planning information we hope to obtain and utilize.

By referencing 40 CFR Part 370 for Type I permits, we align with state reporting requirements. Furthermore, our aim is to specifically reference the EPA's *List of Lists* (40 CFR Part 355) which delineates the 355 Extremely Hazardous Substances for Types II-IV. To further narrow this focus, Types II, III and IV permits are only aimed at those substances on that list that have Threshold Planning Quantities (TPQ) of 10 pounds or less, of which limit this list to 32 chemicals.

Narrowing the focus lessens the burden placed on most businesses while still capturing information on the 32 substances that have the potential to cause the danger, at quantities below that which is required to be reported by the state.

Specifically, these levels in the proposed language change are as follows:

1. TYPE II PERMITS ARE REQUIRED FOR 5 POUNDS OR MORE, UP TO 10 POUNDS.
2. TYPE III PERMITS ARE REQUIRED FOR 1 POUND OR MORE, UP TO 5 POUNDS.
3. TYPE IV PERMITS ARE REQUIRED FOR AMOUNTS LESS THAN A POUND.

Finally, the added language in Section 60.1.2 preserves the exemptions to maximum storage quantities set forth in NFPA 1. This ensures that by adding a permit process to this section, the allowable exemptions to the maximum storage quantities were not inadvertently stripped away.

The following is the FULL list of Extremely Hazardous Substances

40 CFR Part 355 (App. A) – *The List of Lists*

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of December 16, 2016

Title 40 → Chapter I → Subchapter J → Part 355 → Subpart D → Appendix

Title 40: Protection of Environment
 PART 355—EMERGENCY PLANNING AND NOTIFICATION
 Subpart D—Additional Provisions

APPENDIX A TO PART 355—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-86-5	Acetone Cyanohydrin		10	1,000
1752-30-3	Acetone Thiosemicarbazide		1,000	1,000/10,000
107-02-8	Acrolein		1	500
79-06-1	Acrylamide	f	5,000	1,000/10,000
107-13-1	Acrylonitrile	f	100	10,000
814-68-6	Acrylyl Chloride	d	100	100
111-69-3	Adiponitrile	f	1,000	1,000
116-06-3	Aldicarb	b	1	100/10,000
309-00-2	Aldrin		1	500/10,000
107-18-6	Allyl Alcohol		100	1,000
107-11-9	Allylamine		500	500
20859-73-8	Aluminum Phosphide	a	100	500
54-62-6	Aminopterin		500	500/10,000
78-53-5	Amiton		500	500
3734-97-2	Amiton Oxalate		100	100/10,000
7664-41-7	Ammonia	f	100	500
300-62-9	Amphetamine		1,000	1,000
62-53-3	Aniline	f	5,000	1,000
88-05-1	Aniline, 2,4,6-Trimethyl-		500	500
7783-70-2	Antimony Pentafluoride		500	500
1397-94-0	Antimycin A	b	1,000	1,000/10,000
86-88-4	ANTU		100	500/10,000
1303-28-2	Arsenic Pentoxide		1	100/10,000
1327-53-3	Arsenous Oxide	d	1	100/10,000
7784-34-1	Arsenous Trichloride		1	500
7784-42-1	Arsine		100	100
2642-71-9	Azinphos-Ethyl		100	100/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
98-87-3	Benzal Chloride		5,000	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-		500	500
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-		500	500/10,000
98-05-5	Benzeneearsonic Acid		10	10/10,000
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	c	500	500/10,000
98-07-7	Benzotrichloride		10	100
100-44-7	Benzyl Chloride		100	500
140-29-4	Benzyl Cyanide	d	500	500
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-(((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha,2-beta,4-alpha,5-alpha,6E))-		500	500/10,000
534-07-6	Bis(Chloromethyl) Ketone		10	10/10,000
4044-65-9	Bitoscanate		500	500/10,000
10294-34-5	Boron Trichloride		500	500
7637-07-2	Boron Trifluoride		500	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)		1,000	1,000
28772-56-7	Bromadiolone		100	100/10,000
7726-95-6	Bromine	f	500	500

1306-19-0	Cadmium Oxide		100	100/10,000
2223-93-0	Cadmium Stearate	b	1,000	1,000/10,000
7778-44-1	Calcium Arsenate		1	500/10,000
8001-35-2	Camphechlor		1	500/10,000
56-25-7	Cantharidin		100	100/10,000
51-83-2	Carbachol Chloride		500	500/10,000
26419-73-8	Carbamic Acid, Methyl-, O-((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino-		100	100/10,000
1563-66-2	Carbofuran		10	10/10,000
75-15-0	Carbon Disulfide	f	100	10,000
786-19-6	Carbophenothion		500	500
57-74-9	Chlordane		1	1,000
470-90-6	Chlorfenvinfos		500	500
7782-50-5	Chlorine		10	100
24934-91-6	Chlormephos		500	500
999-81-5	Chlormequat Chloride	d	100	100/10,000
79-11-8	Chloroacetic Acid		100	100/10,000
107-07-3	Chloroethanol		500	500
627-11-2	Chloroethyl Chloroformate		1,000	1,000
67-66-3	Chloroform	f	10	10,000
542-88-1	Chloromethyl Ether	d	10	100
107-30-2	Chloromethyl Methyl Ether	b	10	100
3691-35-8	Chlorophacinone		100	100/10,000
1982-47-4	Chloroxuron		500	500/10,000
21923-23-9	Chlorthiophos	d	500	500
10025-73-7	Chromic Chloride		1	1/10,000
62207-76-5	Cobalt, ((2,2'-(1,2-Ethanediybis (Nitrilomethylidyne) Bis(6-Fluorophenolato))(2)-N,N',O,O')-		100	100/10,000
10210-68-1	Cobalt Carbonyl	d	10	10/10,000
64-86-8	Colchicine	d	10	10/10,000
56-72-4	Coumaphos		10	100/10,000
5836-29-3	Coumatetralyl		500	500/10,000
95-48-7	Cresol, o-		100	1,000/10,000
535-89-7	Crimidine		100	100/10,000
4170-30-3	Crotonaldehyde		100	1,000
123-73-9	Crotonaldehyde, (E)-		100	1,000
506-68-3	Cyanogen Bromide		1,000	500/10,000
506-78-5	Cyanogen Iodide		1,000	1,000/10,000
2636-26-2	Cyanophos		1,000	1,000
675-14-9	Cyanuric Fluoride		100	100
66-81-9	Cycloheximide		100	100/10,000
108-91-8	Cyclohexylamine	f	10,000	10,000
17702-41-9	Decaborane(14)		500	500/10,000
8065-48-3	Demeton		500	500
919-86-8	Demeton-S-Methyl		500	500
10311-84-9	Dialifor		100	100/10,000
19287-45-7	Diborane		100	100
111-44-4	Dichloroethyl ether		10	10,000
149-74-6	Dichloromethylphenylsilane		1,000	1,000
62-73-7	Dichlorvos		10	1,000
141-66-2	Dicrotophos		100	100
1464-53-5	Diepoxybutane		10	500
814-49-3	Diethyl Chlorophosphate	d	500	500
71-63-6	Digitoxin	b	100	100/10,000
2238-07-5	Diglycidyl Ether		1,000	1,000
20830-75-5	Digoxin	d	10	10/10,000
115-26-4	Dimefox		500	500
60-51-5	Dimethoate		10	500/10,000
2524-03-0	Dimethyl Phosphorochloridothioate		500	500
77-78-1	Dimethyl sulfate		100	500
75-78-5	Dimethyldichlorosilane	d	500	500
57-14-7	Dimethylhydrazine		10	1,000
99-98-9	Dimethyl-p-Phenylenediamine		10	10/10,000
644-64-4	Dimetilan		1	500/10,000
534-52-1	Dinitroresol		10	10/10,000
88-85-7	Dinoseb		1,000	100/10,000
1420-07-1	Dinoterb		500	500/10,000
78-34-2	Dioxathion		500	500
82-66-6	Diphacinone		10	10/10,000
152-16-9	Diphosphoramide, Octamethyl-		100	100

298-04-4	Disulfoton			1	500
514-73-8	Dithiazanine Iodide			500	500/10,000
541-53-7	Dithiobiuret			100	100/10,000
316-42-7	Emetine, Dihydrochloride	d		1	1/10,000
115-29-7	Endosulfan			1	10/10,000
2778-04-3	Endothion			500	500/10,000
72-20-8	Endrin			1	500/10,000
106-89-8	Epichlorohydrin	f		100	1,000
2104-64-5	EPN			100	100/10,000
50-14-6	Ergocalciferol	b		1,000	1,000/10,000
379-79-3	Ergotamine Tartrate			500	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-			500	500
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate			1,000	1,000
563-12-2	Ethion			10	1,000
13194-48-4	Ethoprophos			1,000	1,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	d		500	500
371-62-0	Ethylene Fluorohydrin	b, d		10	10
75-21-8	Ethylene Oxide	f		10	1,000
107-15-3	Ethylenediamine			5,000	10,000
151-56-4	Ethyleneimine			1	500
542-90-5	Ethylthiocyanate			10,000	10,000
22224-92-6	Fenamiphos			10	10/10,000
115-90-2	Fensulfothion	d		500	500
4301-50-2	Fluenetil			100	100/10,000
7782-41-4	Fluorine	e		10	500
640-19-7	Fluoroacetamide			100	100/10,000
144-49-0	Fluoroacetic Acid			10	10/10,000
359-06-8	Fluoroacetyl Chloride	b		10	10
51-21-8	Fluorouracil			500	500/10,000
944-22-9	Fonofos			500	500
50-00-0	Formaldehyde	f		100	500
107-16-4	Formaldehyde Cyanohydrin	d		1,000	1,000
23422-53-9	Formetanate Hydrochloride	d		100	500/10,000
2540-82-1	Formothion			100	100
17702-57-7	Formparanate			100	100/10,000
21548-32-3	Fosthietan			500	500
3878-19-1	Fuberidazole			100	100/10,000
110-00-9	Furan			100	500
13450-90-3	Gallium Trichloride			500	500/10,000
77-47-4	Hexachlorocyclopentadiene	d		10	100
4835-11-4	Hexamethylenediamine, N,N'-Dibutyl-			500	500
302-01-2	Hydrazine			1	1,000
74-90-8	Hydrocyanic Acid			10	100
7647-01-0	Hydrogen Chloride (gas only)	f		5,000	500
7664-39-3	Hydrogen Fluoride			100	100
7722-84-1	Hydrogen Peroxide (Conc >52%)	f		1,000	1,000
7783-07-5	Hydrogen Selenide			10	10
7783-06-4	Hydrogen Sulfide	f		100	500
123-31-9	Hydroquinone	f		100	500/10,000
13463-40-6	Iron, Pentacarbonyl-			100	100
297-78-9	Isobenzan			100	100/10,000
78-82-0	Isobutyronitrile	d		1,000	1,000
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester			500	500/10,000
465-73-6	Isodrin			1	100/10,000
55-91-4	Isofluorophate	b		100	100
4098-71-9	Isophorone Diisocyanate	g		500	500
108-23-6	Isopropyl Chloroformate			1,000	1,000
119-38-0	Isopropylmethyl-pyrazolyl Dimethylcarbamate			100	500
78-97-7	Lactonitrile			1,000	1,000
21609-90-5	Leptophos			500	500/10,000
541-25-3	Lewisite	b, d		10	10
58-89-9	Lindane			1	1,000/10,000
7580-67-8	Lithium Hydride	a		100	100
109-77-3	Malononitrile			1,000	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	d		100	100
51-75-2	Mechlorethamine	b		10	10
950-10-7	Mephosfolan			500	500
1600-27-7	Mercuric Acetate			500	500/10,000

7487-94-7	Mercuric Chloride		500	500/10,000
21908-53-2	Mercuric Oxide		500	500/10,000
10476-95-6	Methacrolein Diacetate		1,000	1,000
760-93-0	Methacrylic Anhydride		500	500
126-98-7	Methacrylonitrile	d	1,000	500
920-46-7	Methacryloyl Chloride		100	100
30674-80-7	Methacryloyloxyethyl Isocyanate	d	100	100
10265-92-6	Methamidophos		100	100/10,000
558-25-8	Methanesulfonyl Fluoride		1,000	1,000
950-37-8	Methidathion		500	500/10,000
2032-65-7	Methiocarb		10	500/10,000
16752-77-5	Methomyl	d	100	500/10,000
151-38-2	Methoxyethylmercuric Acetate		500	500/10,000
80-63-7	Methyl 2-Chloroacrylate		500	500
74-83-9	Methyl Bromide	f	1,000	1,000
79-22-1	Methyl Chloroformate	d	1,000	500
60-34-4	Methyl Hydrazine		10	500
624-83-9	Methyl Isocyanate		10	500
556-61-6	Methyl Isothiocyanate	a	500	500
74-93-1	Methyl Mercaptan	f	100	500
3735-23-7	Methyl Phenkapton		500	500
676-97-1	Methyl Phosphonic Dichloride	a	100	100
556-64-9	Methyl Thiocyanate		10,000	10,000
78-94-4	Methyl Vinyl Ketone		10	10
502-39-6	Methylmercuric Dicyanamide		500	500/10,000
75-79-6	Methyltrichlorosilane	d	500	500
1129-41-5	Metolcarb		1,000	100/10,000
7786-34-7	Mevinphos		10	500
315-18-4	Mexacarbate	d	1,000	500/10,000
50-07-7	Mitomycin C		10	500/10,000
6923-22-4	Monocrotophos		10	10/10,000
2763-96-4	Muscimol		1,000	500/10,000
505-60-2	Mustard Gas	d	500	500
13463-39-3	Nickel Carbonyl		10	1
54-11-5	Nicotine	b	100	100
65-30-5	Nicotine Sulfate		100	100/10,000
7697-37-2	Nitric Acid		1,000	1,000
10102-43-9	Nitric Oxide	b	10	100
98-95-3	Nitrobenzene	f	1,000	10,000
1122-60-7	Nitrocyclohexane		500	500
10102-44-0	Nitrogen Dioxide		10	100
62-75-9	Nitrosodimethylamine	d	10	1,000
991-42-4	Norbormide		100	100/10,000
	Organorhodium Complex (PMN-82-147)		10	10/10,000
630-60-4	Ouabain	b	100	100/10,000
23135-22-0	Oxamyl		100	100/10,000
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-		500	500
2497-07-6	Oxydisulfoton	d	500	500
10028-15-6	Ozone		100	100
1910-42-5	Paraquat Dichloride		10	10/10,000
2074-50-2	Paraquat Methosulfate		10	10/10,000
56-38-2	Parathion	b	10	100
298-00-0	Parathion-Methyl	b	100	100/10,000
12002-03-8	Paris Green		1	500/10,000
19624-22-7	Pentaborane		500	500
2570-26-5	Pentadecylamine		100	100/10,000
79-21-0	Peracetic Acid		500	500
594-42-3	Perchloromethylmercaptan		100	500
108-95-2	Phenol		1,000	500/10,000
4418-66-0	Phenol, 2,2'-Thiobis(4-Chloro-6-Methyl)-		100	100/10,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate		10	500/10,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-		500	500/10,000
696-28-6	Phenyl Dichloroarsine	d	1	500
59-88-1	Phenylhydrazine Hydrochloride		1,000	1,000/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
2097-19-0	Phenylsilatrane	d	100	100/10,000
103-85-5	Phenylthiourea		100	100/10,000
298-02-2	Phorate		10	10

4104-14-7	Phosacetim		100	100/10,000
947-02-4	Phosfolan		100	100/10,000
75-44-5	Phosgene	f	10	10
13171-21-6	Phosphamidon		100	100
7803-51-2	Phosphine		100	500
2703-13-1	Phosphonothioic Acid, Methyl-, O-Ethyl O-(4-(Methylthio) Phenyl) Ester		500	500
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1Methylethyl)Amino)Ethyl) O-Ethyl Ester		100	100
2665-30-7	Phosphonothioic Acid, Methyl-, O-(4-Nitrophenyl) O-Phenyl Ester		500	500
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio)Phenyl Ester		500	500
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	b, c	500	500
7723-14-0	Phosphorus	a, d	1	100
10025-87-3	Phosphorus Oxychloride		1,000	500
10026-13-8	Phosphorus Pentachloride	a	500	500
7719-12-2	Phosphorus Trichloride		1,000	1,000
57-47-6	Physostigmine		100	100/10,000
57-64-7	Physostigmine, Salicylate (1:1)		100	100/10,000
124-87-8	Picrotoxin		500	500/10,000
110-89-4	Piperidine		1,000	1,000
23505-41-1	Pirimifos-Ethyl		1,000	1,000
10124-50-2	Potassium Arsenite		1	500/10,000
151-50-8	Potassium Cyanide	a	10	100
506-61-6	Potassium Silver Cyanide	a	1	500
2631-37-0	Promecarb	d	1,000	500/10,000
106-96-7	Propargyl Bromide		10	10
57-57-8	Propiolactone, Beta-		10	500
107-12-0	Propionitrile		10	500
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
70-69-9	Propiophenone, 4-Amino-	c	100	100/10,000
109-61-5	Propyl Chloroformate		500	500
75-56-9	Propylene Oxide	f	100	10,000
75-55-8	Propyleneimine		1	10,000
2275-18-5	Prothoate		100	100/10,000
129-00-0	Pyrene	b	5,000	1,000/10,000
140-76-1	Pyridine, 2-Methyl-5-Vinyl-		500	500
504-24-5	Pyridine, 4-Amino-	d	1,000	500/10,000
1124-33-0	Pyridine, 4-Nitro-,l-Oxide		500	500/10,000
53558-25-1	Pyriminil	d	100	100/10,000
14167-18-1	Salcomine		500	500/10,000
107-44-8	Sarin	d	10	10
7783-00-8	Selenious Acid		10	1,000/10,000
7791-23-3	Selenium Oxychloride		500	500
563-41-7	Semicarbazide Hydrochloride		1,000	1,000/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-		1,000	1,000
7631-89-2	Sodium Arsenate		1	1,000/10,000
7784-46-5	Sodium Arsenite		1	500/10,000
26628-22-8	Sodium Azide (Na(N ₃))	a	1,000	500
124-65-2	Sodium Cacodylate		100	100/10,000
143-33-9	Sodium Cyanide (Na(CN))	a	10	100
62-74-8	Sodium Fluoroacetate		10	10/10,000
13410-01-0	Sodium Selenate		100	100/10,000
10102-18-8	Sodium Selenite	d	100	100/10,000
10102-20-2	Sodium Tellurite		500	500/10,000
900-95-8	Stannane, Acetoxytriphenyl-	c	500	500/10,000
57-24-9	Strychnine	b	10	100/10,000
60-41-3	Strychnine Sulfate		10	100/10,000
3689-24-5	Sulfotep		100	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl		500	500
7446-09-5	Sulfur Dioxide	f	500	500
7783-60-0	Sulfur Tetrafluoride		100	100
7446-11-9	Sulfur Trioxide	a	100	100
7664-93-9	Sulfuric Acid		1,000	1,000
77-81-6	Tabun	b, d	10	10
7783-80-4	Tellurium Hexafluoride	e	100	100
107-49-3	TEPP		10	100
13071-79-9	Terbufos	d	100	100
78-00-2	Tetraethyllead	b	10	100
597-64-8	Tetraethyltin	b	100	100

75-74-1	Tetramethyllead	b, f	100	100
509-14-8	Tetranitromethane		10	500
10031-59-1	Thallium Sulfate	d	100	100/10,000
6533-73-9	Thallos Carbonate	b, d	100	100/10,000
7791-12-0	Thallos Chloride	b, d	100	100/10,000
2757-18-8	Thallos Malonate	b, d	100	100/10,000
7446-18-6	Thallos Sulfate		100	100/10,000
2231-57-4	Thiocarbazide		1,000	1,000/10,000
39196-18-4	Thiofanox		100	100/10,000
297-97-2	Thionazin		100	500
108-98-5	Thiophenol		100	500
79-19-6	Thiosemicarbazide		100	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
614-78-8	Thiourea, (2-Methylphenyl)-		500	500/10,000
7550-45-0	Titanium Tetrachloride		1,000	100
584-84-9	Toluene 2,4-Diisocyanate		100	500
91-08-7	Toluene 2,6-Diisocyanate		100	100
110-57-6	Trans-1,4-Dichlorobutene		500	500
1031-47-6	Triamiphos		500	500/10,000
24017-47-8	Triazofos		500	500
76-02-8	Trichloroacetyl Chloride		500	500
115-21-9	Trichloroethylsilane	d	500	500
327-98-0	Trichloronate	e	500	500
98-13-5	Trichlorophenylsilane	d	500	500
1558-25-4	Trichloro(Chloromethyl)Silane		100	100
27137-85-5	Trichloro(Dichlorophenyl) Silane		500	500
998-30-1	Triethoxysilane		500	500
75-77-4	Trimethylchlorosilane		1,000	1,000
824-11-3	Trimethylolpropane Phosphite	d	100	100/10,000
1066-45-1	Trimethyltin Chloride		500	500/10,000
639-58-7	Triphenyltin Chloride		500	500/10,000
555-77-1	Tris(2-Chloroethyl)Amine	d	100	100
2001-95-8	Valinomycin	b	1,000	1,000/10,000
1314-62-1	Vanadium Pentoxide		1,000	100/10,000
108-05-4	Vinyl Acetate Monomer	f	5,000	1,000
81-81-2	Warfarin		100	500/10,000
129-06-6	Warfarin Sodium	d	100	100/10,000
28347-13-9	Xylylene Dichloride		100	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5(((Methylamino)Carbonyl) Oxy)Imino)Pentanenitrile-, (T-4)-		100	100/10,000
1314-84-7	Zinc Phosphide	a	100	500

*Only the statutory or final RQ is shown. For more information, see 40 CFR 355.61.

Notes:

a. This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

b. The calculated TPQ changed after technical review as described in a technical support document for the final rule, April 22, 1987.

c. Chemicals added by final rule, April 22, 1987.

d. Revised TPQ based on new or re-evaluated toxicity data, April 22, 1987.

e. The TPQ was revised due to calculation error, April 22, 1987.

f. Chemicals on the original list that do not meet toxicity criteria but because of their acute lethality, high production volume and known risk are considered chemicals of concern ("Other chemicals"), November 17, 1986 and February 15, 1990.

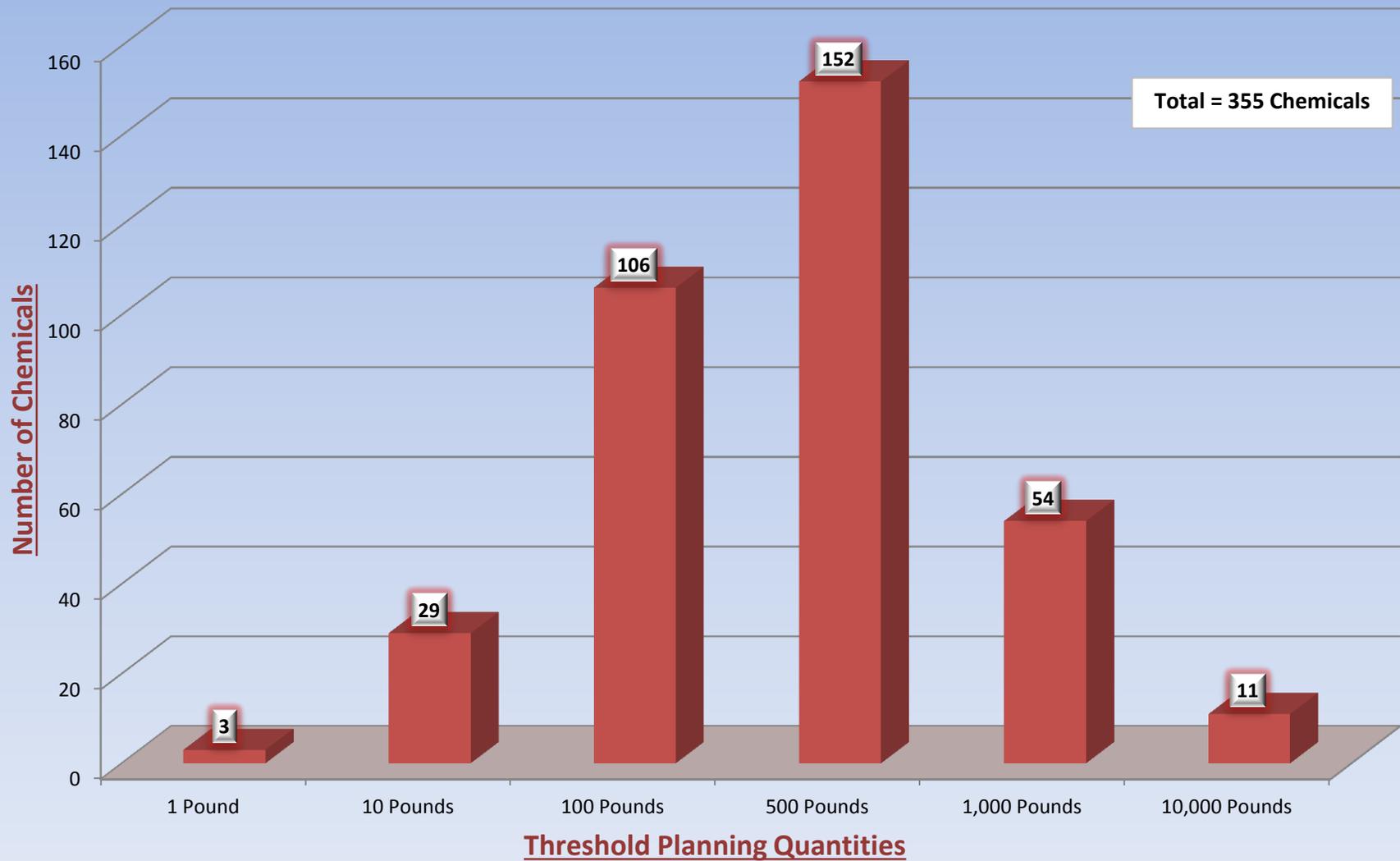
g. The TPQ was recalculated (September 8, 2003) since it was mistakenly calculated in the April 22, 1987 final rule under the wrong assumption that this chemical is a reactive solid, when in fact it is a liquid. RQ for this chemical was adjusted on September 11, 2006.

List of 32 Extremely Hazardous Substances

With Threshold Planning Quantities of 10 pounds or less

<u>Chemical Name</u>	<u>TPQ (lbs.)</u>	<u>Chemical Name</u>	<u>TPQ (lbs.)</u>
Azinphos-Methyl	10	Fluoroacetyl Chloride	10
Benzeneearsonic Acid	10	Hydrogen Selenide	10
Bis(Chloromethyl) Ketone	10	Lewisite	10
Carbofuran	10	Mechlorethamine	10
Chromic Chloride	1	Methyl Vinyl Ketone	10
Cobalt Carbonyl	10	Monocrotophos	10
Colchicine	10	Nickel Carbonyl	1
Digoxin	10	Organorhodium Complex	10
Dimethly-p-Phenylenediamine	10	Paraquat Dichloride	10
Dinitrocresol	10	Paraquat Methosulfate	10
Diphacinone	10	Phorate	10
Emetine, Dihydrochloride	1	Phosgene	10
Endosulfan	10	Propargyl Bromide	10
Ethylene Fluorohydrin	10	Sarin	10
Fenamiphos	10	Sodium Fluoroacetate	10
Fluoroacetic Acid	10	Tabun	10

EHS TPQ Numbers



1 Pound	3
10 Pounds	29
100 Pounds	106
500 Pounds	152
1,000 Pounds	54
10,000 Pounds	11