

MAHARASHTRA POLLUTION CONTROL BOARD

TESTING OF FIRE-CRACKERS TO ASSESS THE COMPLIANCE OF NOISE LEVEL STANDARDS PRESCRIBED UNDER ENVIRONMENT (PROTECTION) RULES, 1986.

Oct 2014

1. Introduction:

Bursting of fire crackers create significant noise pollution during the Diwali Festival. MPCB for last few years is trying to create public awareness towards the high noise levels generated during the bursting of the crackers and its associated adverse health impacts. As a part of awareness activity, MPCB has carried out testing of fire crackers at various places in the month of



Oct'2014 in association with Police department, local NGO's Petroleum and Explosive Safety organization to assess the compliance of noise levels standards prescribed under Environment (Protection) Rules, 1986, amendment in 1999. The Testing was carried at



Mumbai, Pune, Nagpur ,Aurangabad, Kolhapur, Nashik, Amravati, Thane and Chandrapur during the period of 9th -10th Oct.2014 at these places in presence of local print and electronic media to create awareness among the people and children's.

Noise standards for fire crackers have been notified vide GSR No.682 (E) dated 5th October, 1999 under the Environmental (Protection) Act. As per this notification, the manufacture, sale or use of fire crackers generating noise levels exceeding 125 dB (A) or 145 dB (C)_{pk} at 4 meters distance from the point of bursting are prohibited for individual fire crackers. For fire crackers in series, these noise limits are suitably made more stringent depending upon the number of crackers in series. The limit be reduced by $5 \log_{10} (N)$ dB, where N= no of crackers Joined together.

2. Harmful effect of Fire Crackers:

- **Health hazards:** Burns due to accidents, deafness due to exposure to high level Noise produced by fire crackers.
- Firecrackers Noise can cause hearing loss, high blood pressure, sleeping disturbances and sudden exposure to loud noise can cause temporary or permanent deafness.
- It increases the Air Pollution in the environment which can cause Smog may be harmful to inhale. .

3. Observations:

Samples of Fire crackers of different types from various companies available in the local market were procured. They were tested at where the open space was available with hard / concrete surface. Type- I noise meters were used, one for peak measurements and another for Impulse measurements. The noise measurements were made at 5mtr. distance from the fire crackers.



Following tables shows details of the crackers tested at Mumbai, Pune, Nagpur, Aurangabad, Kolhapur, Nashik, Amravati, Thane and Chandrapur and their compliance status with respect to Environment (Protection) rules 1986

Testing of firecrackers to assess the compliance of noise level standards prescribed under environment (Protection) Rules, 1986.

Violation observed for the crackers which are in series

City	No of tested brands	Violence of standard		Total no. of violations
		Impulse	Peak	
Mumbai	7	6	7	13
Nagpur	13	10	13	23
Pune	4	1	1	2
Kolhapur	5	0	2	2
Aurangabad	3	0	2	2
Nashik	3	0	0	0
Chandrapur	3	0	2	2
Thane	3	2	3	5
Amravati	11	2	1	3
Total	52	21	31	52

Violation observed in single crackers

	No of tested brands	Violence of standard		Total no. of violations
		Impulse	Peak	
Mumbai	9	0	0	0
Nagpur	39	13	18	31
Pune	7	3	2	5
Kolhapur	9	0	0	0
Aurangabad	9	0	0	0
Nashik	9	0	0	0
Chandrapur	12	0	0	0
Thane	6	0	0	0
Amravati	26	0	0	0
Total	129	16	20	36

NOTE:

Noise Standards for single crackers: Impules -125 dB(A), Peak-145 dB (C)

Noise Standards for crackers in series : The above noise limit be reduced by $5 \log_{10} (N)$ dB, where N=No of crackers joined together

As far as crackers in series are concerned, test was carried out for 52 different no. of brands. Out of which 21 no.of violations with respect to impulse standard and 31 nos of violations with respect to peak standard were observed. Regarding Single crackers total 129 different samples were tested out of which 16 no. of violations were observed for *Impulse* standards and 20 no. of violations were observed for *peak standard* violations. In totality, it is observed only 36 violations were observed in respect to single crackers where as all the crackers in series tested i.e 52 are violated the one or other noise standards (impulse or peak) and are not complied with the EP Noise Rules 1986 , amended in 1999.

The values of the noise monitoring are given at **Annexure-1 to 9 for** Mumbai, Pune, Thane, Aurangabad, Amravati, Kolhapur, Nashik, Chandrapur, Nagpur respectively.

Annexure-1

TESTING OF FIRE CRACKER AT RCF GROUND CHEMBUR, MUMBAI ON 09.10.2014						
Sr.No.	Name of Company	Brand name of fire cracker	Noise Level limit written on the firecracker	Chemical composition written on the	Sound pressure level	Sound pressure level
				firecracker	IMPULSE (Max)	PEAK (Max)
					In dB(AI)	In dB(Cpeak)
Single firecrackers			Y/N	Y/N	Max. allowable decibel= 125	Max. allowable decibel= 145
1	Naya Cornation Fire Works	NAZI Green	N	Y	84	144.90
2	Shama Firework Industries	Vulcano	N	Y	88	144.9
3	Standard Fireworks Pvt. Ltd.	Thunder	N	N	108	144
4	Standard Fireworks Pvt. Ltd.	Gold Rush	N	Y	60	106.9(heavy smoke)
5	Vinayaga Fireworks	Sweet-16(Series)	Y	Y	117	130
6	Shri Kalishwari Fireworks Pvt.Ltd.	Whistling wheel	N	Y	90	108
7	The Cornation Fireworks Factory	Ziti	N	Y	104	108
8	Vinayaga Fireworks	Sizzling salsa	Y	Y	94	138
9	Sony fireworks pvt. Ltd.	Sun Rise	Y	Y	87	136
SERIES FIRE CRACKERS						
Sr.No.	Name of Company	Brand name of fire cracker	Noise Level limit written on the firecracker	Chemical composition written on the	Sound pressure level	Sound pressure level
				firecracker	IMPULSE (Max)	PEAK (Max)
					In dB(A)	In dB(C)
1	Naya Fireworks	Nazi	N	Y	125	145

2	The Cornation Fireworks Factory	Cornation 1010 wala	N	Y	112,107 (std:109)	138 (std:129)
3	Standard Fireworks	Red ford 2000	N	N	123 (std:106)	139(std:128)
4	The Cornation Fireworks	shock wave	N	Y	106,115 (std:106)	140(std:129)
5	Vinayaga Fireworks	Hot Mirchi	Y	Y	83,82 (std:106)	143(std:129)
5	Standard Fire works	Golden Bonaza	Y	Y	120 (std:109)	135 (std:130)
6	The Cornation Fireworks	Shagai Magic	N	Y	88 (std:109)	140 (std:125)
7	The Cornation Fireworks	10000 wala	N	Y	117,113 (std:93)	140 (std:125)

Annexure 2

Testing of Fire Crackers at MIT College, Cricket ground, Kothrud, Pune dated 11/10/2014

S. No.	Name of Company	Brand Name of Fire Cracker	Sound Pressure Level Impulse (Max) in dB(A)	Sound Pressure Level Peak (Max) in dB(C)
A	Single Cracker		Max allowable decibel=125	Max allowable decibel=145
01	S K K Lakshmanan Fireworks Industries	Anil Delux Sutali Atom bomb	134.3	146.4
02	Anil Fireworks Shivkashi	Laxmi Bomb	127.2	138.7
03	Anil Fireworks Shivakashi	7 Shots	105.0	127.5
04	Zamir fireworks, Sangamner	Black commando (Atom bomb)	128.9	145.4
05	S K K Lakshmanan Fireworks Industries	Anill Jangle Fight (small cracker)	89.3	103.4
06	Anil Fireworks Shivkashi	Double sound cracker	92.5	101.5
07	Anil Fireworks Shivkashi	Tripple sound cracker	110.3	122.4

S. No.	Name of Company	Brand Name of Fire Cracker	Sound Pressure Level Impulse (Max) in dB(A)	Sound Pressure Level Peak (Max) in dB(C)
B	Series Cracker			
08	Kavita Fireworks Shivakashi	1000 wala lad	119.2 (Limit-110)	136.4 (Limit-130)
09	SRI Thangamani Fireworks factory	Samll lavangi lad	98.0 (Limit-118.1)	118.3 (Limit-138.1)
10	Anil Fireworks shivakashi	Dil Kush 50 shots	114.5 (Limit-116.51)	127.3 (Limit-136.51)
11	Anil fireworks shivakashi	Small lad series	102.2 (Limit-118.5)	123.2 (Limit-138.5)

Annexure 3

**Testing of Fire Crackers Conducted at Rayladevi Talav Premises
By
Maharashtra Pollution Control Board, Thane on dtd. 9/10/2014**

Sr. No.	Name of Company	Brand name of fire cracker	Noise level limit written on the packing of firecracker	Chemical composition written on the Firecracker	Sound Pressure level Impulse in dB(AI)	Sound pressure level MAX dB(C)pk
A	Single firecrackers	-	Y/N	Y/N	Max. allowable decibel=125	Max. allowable decibel=145
1.	Kranti Fireworks Kamarale (M.S.)	Saddam Mega Bomb	Y	KNO ₃ , BaNO ₃ , Al, S	100.5	126.8
					99.2	127.9
					94.8	124.2
2.	Maratha Fireworks Rashegaon Nashik	Lion King	Y	KNO ₃ , Al, S	96.7	128.0
					88.8	123.3
					93.6	127.6
3.	Jumbo Fireworks Pvt. Ltd. Velautham Road, Shivakasi	Jumbo Bombs Green	125 dB(AI)	Kno ₃ , Al, S, H ₃ BO ₃	88.8	124.5
					86.9	124.9
					89.0	128.9
4.	Standards Fireworks Pvt. Ltd.	peacock	No	No	87.2	117.5
					86.2	124.7
					82.7	126.0

5.	Shama Fireworks Ind. Shirsoli Jalgaon	Vulcano	Y	KNO ₃ , BaNO ₃ , Al, S	88.0	127.6
					115.0	128.1
					99.4	129.0
6.	Standards Fireworks Pvt. Ltd. V.N. No. 2916, Pudhar Village T. Sedapatti (post)	2 sound peacock Enjoy Fireworks	No	No	75.2	116.7
					81.9	106.4
					74.3	120.9
B	Series Cracker					
1.	Mohana Fire Works Shiakasi	Shiva priya 1000 wala	No	No	99.3 (limit- 110)	136.8 (limit- 130)
2.	K.R. Fireworks Shivakasi	K.R. 1000 wala	Y	No	112.5 (limit- 110)	143.7 (limit- 130)
3.	A.R.J. Fireworks, Shivakasi	5000 wala BADS BOYS	No	No	119.6 (limit-106.51)	114.6 (limit- 127.51)

Annexure 4

Testing of Fire Crackers at Jhalani Ground MIDC Chikalthana, Aurangabad				
Date : 10/10/2014 Time : 12:00 to 12.45 P.M.				
Sr. No.	Name of Company	Brand name of fire Cracker	Sound pressure level IMPULSE (Max) In dB(A)	Sound pressure level PEAK (Max) In dB(C)
Single Crackers			Max allowable decible = 125	Max allowable decible = 145
1	Shyama Fire Works Industry, Shirsoli, Jalgaon	Vulcano	Avg: 91.1 Max: 92.4 Min: 89.8	Avg: 94.6 Max: 95.2 Min: 94.1
2	Vidarbha Fireworks Industries, Akola	Soldier Bomb	Avg: 79.0 Max: 80.2 Min: 77.8	Avg: 94.3 Max: 96.0 Min: 92.7
3	Vidarbha Fireworks Industries, Akola	New parrot bomb	Avg: 82.3 Max: 84.2 Min: 80.4	Avg: 92.1 Max: 95.7 Min: 88.6

4	Sri Vijay Pyrotechnic factory, Sivakasi	Magic Fountain	Avg: 79.1 Max: 81.3 Min: 77.0	Avg: 86.8 Max: 89.2 Min: 84.5
5	Jyoti Fire Works, Sivakashi	Hydro Bomb Green	Avg: 79.6 Max: 87.3 Min: 72.0	Avg: 90.6 Max: 94.5 Min: 86.8
6	Sri Kalishwari Fire Works, Sivakashi	Bullet bomb	Avg: 79.2 Max: 82.1 Min: 76.4	Avg: 89.0 Max: 92.5 Min: 85.6
7	Cock Brand-Sri Kalishwari Fire Works Sivakashi	Lavangi bomb	Avg: 69.2 Max: 70.3 Min: 68.2	Avg: 80.5 Max: 84.9 Min: 76.1
8	Sri Vijay Pyrotechnic factory, Sivakasi	Sheri - anar	Avg: 92.2 Max: 94.3 Min: 90.1	Avg: 107.6 Max: 108.1 Min: 107.0
9	Sri Kalushwari Fire Works, Sivaksahi	Flower pots	Avg: 69.1 Max: 70.9 Min: 67.3	Avg: 76.3 Max: 80.3 Min: 72.1
Crackers in series			Max allowable decible = 105	Max allowable decible = 105
10	Standard Fire works, Sivakashi	Music Party	Avg: 82.3 Max: 85.2 Min: 79.5	Avg: 103.1 Max: 106.5 Min: 92.0
11	Standard Fire works, Sivakashi	2000 Shells	Avg: 98.3 Max: 100.9 Min: 95.8	Avg: 109.1 Max: 116.2 Min: 102.1
12	Sony fire works pvt. Ltd.	Avtar 50	Avg: 82.7 Max: 86.7 Min: 78.7	Avg: 88.8 Max: 92.2 Min: 85.4
13	Ayyan Fire works factory, Shivakashi	Shanghai Nights	Avg: 89.2 Max: 95.3 Min: 83.1	Avg: 95.7 Max: 99.4 Min: 92.1
14	Jumbo fire works, Shivakashi	Winter shie - 100 shots	Avg: 92.2 Max: 100.1 Min: 84.4	Avg: 104.6 Max: 110.5 Min: 98.7
15	Standard Fire works, Sivakashi	Magic Whip	Avg: 87.0 Max: 92.5 Min: 81.6	Avg: 95 Max: 99.4 Min: 90.6

Annexure 5

Testing of Fire Crackers at Play Ground of Art's Science and Commerce Collage (Narsimma Harraya Trust), Kiran Nagar, Amravati

Sr. No.	Name of Company	Brand name of fire cracker	Noise Level Limit written on the firecracker	Chemical composition written on the	Sound pressure level	Sound pressure level
				Firecracker	IMPULSE (Max)	PEAK (Max)
					In dB(A)	In dB(C)
Series firecrackers			Y/N	Y/N	Max. allowable decible	Max. allowable decible
1	Shri Chima Pyro Tech,55-A,Kamak Rd, Sivakasi-626189	Bonsai Lar-1000	Y	Y	108(limit - 110)	118(limit-130)
2	Shri Arti Crackers Sivakasi	Red Giant 100 Deluxe	N	Y	113(limit - 115)	115(limit - 135)
3	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandi's 1000 Lar	N	N	110(limit - 110)	115(limit - 135)
4	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandi Rikshawala	N	N	110(limit - 110)	114 limit - 135)
5	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandi's 600 Lar	N	N	116(limit - 111)	121(limit - 134)
6	Aksayaa Fireworks Industry, Sivakasi	Electric Crackers	N	N	106(limit - 111)	112(limit - 134)

7	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandi's 5000 Lar	N	N	109(limit - 107)	115(limit - 127)
8	Jyothi Fire Works Industreis Sivakasi	Zebra War	N	N	105(limit - 111)	110(limit - 134)
9	Dulhan Delux	Dulhan Series	N	N	109(limit - 111)	114(limit - 134)
10	Jyothi Fire Works Industreis Sivakasi	Jyoti Electric Crackers	N	N	112(limit - 111)	115(limit - 134)
11	Ayyan Fire Works Factory Pvt Ltd Sivakasi	Deluxe 10 CM Maroon Crackers	N	N	92(limit - 111)	102(limit - 134)

Sr. No.	Name of Company	Brand name of fire cracker	Noise Level Limit written on the firecracker	Chemical composition written on the	Sound pressure level	Sound pressure level
				Firecracker	IMPULSE (Max)	PEAK (Max)
					In dB(A)	In dB(C)
Single firecrackers			Y/N	Y/N	Max. allowable decible=125	Max. allowable decible=145
1	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Vignesh Crackers	N	N	110	124
2	Sunshine Pyro Indiaa Sivakashi	Siren	N	N	85	91
3	Win Fire Works Industries Sivakasi	Win 2 sound	N	N	91	92
4	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nand's 2 sound	N	N	104	111

5	ARJ Fire Works Sivakasi	Deepam Brand	N	Y	96	106
6	Ayyan Fire Works Factory Pvt Ltd Sivakasi	Ayans 3 sound	N	N	101	109
7	Ayyan Fire Works Factory Pvt Ltd Sivakasi	Bunny Brand	N	N	91	11
8	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nand's Atom Fountain	N	N	105	112
9	Neelam Industries Kishangarh- 305 801 (Rah)	Commander	N	Y	98	105
10	Jyothi Fire Works Industreis Sivakasi	Hydro Bomb Green	N	N	99	109
11	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Dynamite Bomb	N	N	88	103
12	Vinayagar Fireworks Factory Sivakasi	Vilvam Brand	N	N	86	87
13	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	King Kong	N	N	89	120
14	Bandukwala Fire Works Industreis Vill Shiloda,Akola	Lalkar	Y	Y	106	120
15	Falcano	Falcano	N	N	88	109
16	Vidarbha Fire Works Industries Vill. Bandaraj, Dist.Akola	Vidrabha's Bofors Bomb	N	N	89	108
17	Jyothi Fire Works Industreis Sivakasi	Mega Power Green	N	N	88	108

18	Vidarbha Fire Works Industries Vill. Bandaraj, Dist.Akola	Soldier Bomb	N	N	98	118
19	Ayyan Fire Works Factory Pvt Ltd Sivakasi	Shogun Bombs Bunny	N	N	89	107
20	Supreme Fire Works Factory Sivakasi	Super Bullet Dhanush	Y	Y	94	102
21	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandi Brand Red Bijili	N	N	80	97
22	King Fire Works Company Shanmugakany Fire Works Sivakasi	Parrot 5 CM	N	N	96	103
23	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Nandis Lakshmi	N	N	99	101
24	Nandini Fire Works Sivakasi	Winnie's Brand Parrot	N	N	97	102
25	Dynass 333	3 Sound & Colour	Y	Y	75	93
26	Jayalakshmi Fire Works, Kothankulum Vill. Rajapalayam	Bird Electric Big	N	N	98	102

Annexure - 6

Testing of Firecrackers at CSIBER Institute Ground, University Road, Dist. Kolhapur
On dated. 13/10/2014

Sr. No.	Name of Company	Brand Name of Fire cracker	Noise level limit written on the firecracker	Chemical composition written on the firecracker	Sound pressure level IMPULSE (Max) In dB (A)	Sound pressure level PEAK (Max) In dB (C)
<u>Single firecrackers</u>			Y/N	Y/N	Max. allowable decibel=125	Max. allowable decibel=145
1	Deepika Fire Works Industries, Shivkasi.	Classic Bomb	N	Y	109.7	119.1
2	Not Mention	Tiger Bomb	N	Y	109.3	114.0
3	Big Fire Works, Terkheda	Super Power Big Kong	N	Y	109.7	119.0
4	Shri Balaji Fire Works Industries, Shivkashi.	Hydro Bomb	N	N	109.7	118.5
5	Supreme Pyrotechnic 91/E1, CPKSA Road Sivakasi	7 Colour Shots	Y	Y	101.0	107.9
6	Jai Ram Fire Works, Sivakasi.	Two Sound	N	N	103.6	107.1
7	Vijayshree Fireworks Sivakasi.	Mori	N	N	109.7	119.7
8	Sri Kaliswari Fireworks Pvt Ltd, 5-A Shunmuga Nadar Road, Sivakasi.	Penta Sky Flash	Y	Y	104.4	105.9
9.	Rehoboth Fireworks, 1/217 North Street M. Duraisamy Puram, Sivakasi.	Ben 10 Kit Kat	N	N	95.5	95.38

				Y/N	Y/N		AI	C peak
1	The Ravindra Fireworks Industries, 261/4, Gnagiri Road, Sivkashi	Chankchakk ar	Series	Y	N	125 dp (AL)	101.3 (Limit 115)	120.5 (Limit 135)
2	The Ravindra Fireworks Industries, 261/4, Gnagiri Road, Sivkashi	RANG BAZAAR	Individual	Y	Y KMNO3-75%, C-12%, S-11%, Binders-2%	125 dp (AL)	100.2	115.2
3	Shri Ram Fire Works Factory, Shivkashi, 626189	Flower Pots Deluxe	Individual	N	N	,--	78.8	91.6
4	Swarna Fire Works Factory, Shivkashi	Saddam Bom(Green)	Individual	N	N	,--	96.1	91.8
5	Savitri Fireworks, Parola	Khali Crackers	Individual	N	N	,--	89.8	110.2
6	Malati Fire Works Factory, Parola (M.S.)	Tajmahal Lar 2000 Chick Brand	Series	N	N	,--	112.8 (Limit 118)	128.2 (limit128)
7	Malati Fire Works Factory, Parola (M.S.)	Delux Colour Koti- Chick Brand	Individual	N	N	,--	83.8	92.1
8	Savatri Fire Works Factory, Parola (M.S.)	20 Deluxe Crackers	Series	N	N	,--	103.8 (limit 118)	108.2 (limit 128)
9	Savatri Fire Works Factory, Parola (M.S.)	Rambo Crackers	Individual	N	N	,--	94.1	113.1

Regional Office, M.P.C.Board, Chandrapur.						
Testing of Fire Crackers at Police Ground, Chandrapur-09 October 2014						
S.No	Name of Company	Brand name of Fire Cracker	Noise Level limit written on fire cracker	Chemical composition written on Fire Cracker	Sound Pressure Level	Sound Pressure Level
					IMPULSE (Max) dB(A)	PEAK (Max) dB(C)
Single Firecracker			Y/N	Y/N	Max. allowable decible=125	Max. allowable decible=145
1	Supreme Fireworks factory, Sivakashi.	Jumbo Delux (Sutli Bomb)	N	Y	81.9	124.9
			N	Y	88.5	132.1
2	Shree Vijay Pyrotechnic Factory factory,	King Kong Bomb (Sutli bomb)	N	Y	81.8	128.7
			N	Y	98.3	128.5
3	Akshyaa Fire Works Industries, Shivakashi.	Megha (Sutli Bomb)	N	N	82.6	129.3
			N	N	86.3	131.8
4	Radhika Fire Works Factory, Shivakashi.	Nazik Bomb (Sutli Bomb)	N	N	81.2	122.5
			N	N	80.2	125.1
5	Sankar Fire Works, Shivakashi.	King of King (Sutli Bomb)	N	N	97.4	116.2
			N	N	62.4	112.8
6	Supreme Fireworks factory, Sivakashi.	Hydro foils Bomb (Sutli Bomb)	N	N	79.5	117.5
			N	N	83.8	126.5
7	Manoj Fireworks Shivakashi.	Hanuman Bomb	N	N	82	125.9
			N	N	74.4	121.5
8	Lovely Fire Works, Shivakashi.	Laxmi Bomb, Atlas Bomb	N	N	81.6	121.5
			N	N	88.6	121.6
9	Supreme Fireworks factory, Sivakashi.	Koyal Bomb	N	N	73.7	123.4
			N	N	85.7	121.6
10	Supreme Fireworks factory, Sivakashi.	Rocket , (Dhanush, INSAT)	N	N	81.7	86.3
			N	N	84.4	89.1
11	Supreme Fireworks factory, Sivakashi.	Ground Flower	N	N	78	85.8
12	Guruswami Fireworks, Shivakashi	Ground Chakra	N	N	73.7	79.6

Regional Office, M.P.C.Board, Chandrapur.						
Testing of Fire Crackers at Police Ground, Chandrapur-09 October 2014						
S.No	Name of Company	Brand name of Fire Cracker	Noise Level limit written on fire cracker	Chemical composition written on Fire Cracker	Sound Pressure Level	Sound Pressure Level
					IMPULSE (Max) dB(A)	PEAK (Max) dB(C)
Series Firecracker			Y/N	Y/N		
1	Satheis Firework Industry, Shivakashi.	Supreme 5000 wala	N	N	121.6 (Max. allowable decible 106.51)	126.5 (Max. allowable decible 126.51)
2	Shree Muniswaran fire Works Shivakashi.	Tajmahal Brand 1000 wala	N	N	118.8 (Max. allowable decible 110.0)	116.8 (Max. allowable decible 130.0)
3	Punitha Fire Works Shivakashi.	300 Wals Lar	N	N	97.6 (Max. allowable decible 112.62)	110.6 (Max. allowable decible 132.62)

Annexure – 9

SAMPLE COLLECTED FROM MARKET-2014

Annexure I

Sr No	Sample No	Manufacturer	Name of Brand	Name of Shop	Purchase by/team	Purchase date	Tested on	Sound Level Results	
								Standard	Observed Value
1	1	Standard Fireworks Pvt. Ltd; Sivakasi	King Bullet Bomb	Modern Traders, Nagpur	Team	08.10.2014	09.10.2014	i) A1(125 dBmax) ii) Cpk(145 dbmax)	A1 102.7 Cpk 128.0
2	2	Lakshmi Crackers, Sivakasi	Lakshmi 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	103.6 131.9
3	3	Kantha Fireworks, Sivakasi	Zippy 3" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	125.8 145.1
4	4	Sri Kantha Fireworks Sivakasi	Bison Flight Deluxe (28 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	118.1 137.3
5	5	---Do---	Hathi Deluxe (24 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(117.7dBmax) ii) Cpk(137.7 dbmax)	126.1 147.2
6	6	Standard Fireworks Pvt. Ltd; Sivakasi	Electric Crackers (36 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(18.4 dBmax) ii) Cpk(138.4 dbmax)	119.1 138.1
7	7	Bandukwala Fireworks Industries, Akola	Lakkar Bomb Foil (Atom Bomb)	Asian Explosives Nagpur	---Do---	---Do---	---Do---	i) A1(116.2dBmax) ii) Cpk(136.2 dbmax)	112.2 131.6
8	8	---Do---	Lakshmi 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	112.7 131.9
9	9	Poohi Fireworks-Industries Sivakasi	Lakshmi 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	135.9 159.7
10	10	Vidarbha Fireworks Industries Akola	New Parrot 3 1/2" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	135.4 159.3
11	11	Metro Fireworks Factory, Sivakasi	200 Wala Garland	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dbmax)	130.6 150.3
12	12	---Do---	Royal Fair Giant Cracker (28 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(113.4 dBmax) ii) Cpk(133.4 dbmax)	129.2 149.4
13	13	Gems Fireworks Sivakasi	King Bullet Bomb	Virat Fireworks Nagpur	---Do---	---Do---	---Do---	i) A1(117.7 dBmax) ii) Cpk(137.7 dbmax)	130.2 153.5
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	130.7 153.9
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	122.0 142.9
								i) A1(117.7 dBmax) ii) Cpk(137.7 dbmax)	121.6 142.1
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	119.5 142.3
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	116.8 136.9
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	123.0 144.0
								i) A1(125 dBmax) ii) Cpk(145 dbmax)	122.1 144.0

Cont....2

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Annexure

Sr No	Sample No	Manufacturer	Name of Brand	Name of Shop	Purchase by/team	Purchase date	Tested on	Sound Level Results	
								Standard	Observed Value
14	14	Bandukwala Fireworks Industries, Akola	Lakkar Bomb Foil	Virat Fireworks, Nagpur	Team	08.10.2014	09.10.2014	i) A/(125 dBmax) ii) Cpk(145 dBmax)	AI 135.0 Cpk 158.1
15	15	-----Do-----	Lakkar Bomb Green	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	134.5 156.8
16	16	Sri Krishna Fireworks, Sivakasi	Atom Bomb Foil	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	134.2 156.9
17	17	Sunshine Pyro Industries, Sivakasi	King of Kong (Atom Bomb)	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	133.5 157.3
18	18	Sri Harikrishna Fireworks (P) Ltd, Sivakasi	Honda Bomb (Atom Bomb)	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	129.8 153.5
19	19	Vinayaga Fireworks, Sivakasi	King of King Foils (Atom Bomb)	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	129.7 153.6
20	20	-----Do-----	Parrot 4"	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	133.8 157.6
21	21	Anil Fireworks Factory, Sivakasi	Lakshmi 4"	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	135.3 159.2
22	22	Standard Fireworks Pvt. Ltd, Sivakasi	Electric Cracker (24 Wala)	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	133.6 153.8
23	23	Vasantha Fireworks Factory, Sivakasi	Garland	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(137.7 dBmax)	131.0 152.6
24	24	J.K. Fireworks, Terkheda Osmanabad	Santha's Lakshmi 4"	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	134.3 158.1
25	25	Vasantha Fireworks Factory, Sivakasi	AXN Atom Bomb	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	136.7 160.6
26	26	The Popular Fireworks Sivakasi	Popular Terror Atom Bomb	-----Do-----	-----Do---	-----Do---	-----Do---	i) A/(125 dBmax) ii) Cpk(145 dBmax)	131.2 154.5
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	128.6 151.5
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	130.9 152.8
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	129.2 152.5
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	124.4 143.5
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	123.1 142.2
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	132.8 155.2
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	128.6 147.8
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	131.3 154.7
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	133.0 156.9
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	112.7 127.6
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	134.4 155.9
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	134.9 158.3
								i) A/(125 dBmax) ii) Cpk(145 dBmax)	133.7 157.6

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SAMPLE COLLECTED FROM MARKET-2014

Annexure I

Sr No	Sample No	Manufacturer	Name of Brand	Name of Shop	Purchase by/Team	Purchase date	Tested on	Sound Level Results		
								Standard	Observed Value	
27	27	Jumbo Fireworks (J) Pvt. Ltd, Sivakasi	Jumbo Bomb Green	Chandak Fireworks Industries Nagpur	Team	08.10.2014	09.10.2014	i) AI(125 dBmax) ii) Cpk(145 dbmax)	AI 123.5 143.1 108.4 128.5	Cpk 158.4 156.1 157.6 157.7
28	28	J.K. Fireworks, Terkheba, Osmabad	Golden Sound Atom Bomb	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	134.2 132.3 133.5 133.6	158.4 156.1 157.6 157.7
29	29	Kani Fireworks, Sivakasi	Terror Bomb (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	133.5 133.6	157.6 157.7
30	30	Aravind Fireworks Sivakasi	Classic Bomb Green (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	127.8 132.4	147.5 156.8
31	31	Sankar Fireworks, Sivakasi	King of King (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	133.2 132.4	157.2 156.1
32	32	Kani Fireworks Sivakasi	Buller Bomb	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	127.0 129.1	149.5 151.3
33	33	Jumbo Fireworks Sivakasi	Tusker Jumbo 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	131.4 128.6	155.0 150.9
34	34	Standard Fireworks, Sivakasi	Lakshmi 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	127.2 120.0	150.2 136.7
35	35	Jumbo Fireworks (J) Pvt. Ltd, Sivakasi	24 Shells Deluxe Garland	---Do---	---Do---	---Do---	---Do---	i) AI(118.4 dBmax) ii) Cpk(138.0 dbmax)	125.7 125.5	148.3 148.4
36	36	Sri Adhi Parasakti Fireworks Sivakasi	100 Lar Chatak Garland	---Do---	---Do---	---Do---	---Do---	i) AI(115 dBmax) ii) Cpk(133 dbmax)	92.8 94.6	113.2 115.2
37	37	Sree Narmatha Fireworks Industries Sivakasi	Jumbo King Atom Bomb	Ishwardas & Sons, Nagpur	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	123.4 130.3	142.9 153.0
38	38	Banadukwala Fireworks Industries Akola	Pukar Bomb Green	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	134.4 134.3	158.0 158.0
39	39	-----Do-----	Pukar Bomb (Atom Bomb) Foils	---Do---	---Do---	---Do---	---Do---	i) AI(125 dBmax) ii) Cpk(145 dbmax)	135.7 132.8	154.2 156.3

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Annexure I

Sr No	Sample No	Manufacturer	Name of Brand	Name of Shop	Purchase by/team	Purchase date	Tested on	Sound Level Results	
								Standard	Observed Value
40	40	Sri Amman Fireworks, Sivakasi	Atom Bomb	Ishwardas & Sons, Nagpur	Team	08.10.2014	09.10.2014	i) A1(125 dBmax) ii) Cpk(145 dBmax)	A1 130.0 Cpk 150.8 130.7 154.4
41	41	Vidarbha Fireworks Industries Akola	Soldier Bomb	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	134.0 157.0 134.6 158.2
42	42	Sunshine Pyro Indiaa, Sivakasi	King of Kong (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	133.2 157.1 126.9 148.4
43	43	Standard Fireworks, Sivakasi	Thunder Bomb (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	135.2 159.5 135.5 159.5
44	44	Bandukwala Fireworks Industries, Akola	Lalkar Bomb Foil (Atom Bomb)	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	132.6 155.7 132.8 156.1
45	45	Raajesh Fireworks Industries, Sivakasi	Classic Atom Bomb	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	133.1 156.2 129.2 148.6
46	46	Sri Amman Fireworks, Sivakasi	King Kong (32 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(117.4 dBmax) ii) Cpk(137.4 dBmax)	127.0 149.6 126.1 148.4
47	47	Sri Asok Fireworks industries, Sivakasi	Lakshmi 4" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	127.9 150.4 128.5 151.6
48	48	RCCS Fireworks Sivakasi	Lakshmi 3½" Maroon	---Do---	---Do---	---Do---	---Do---	i) A1(125 dBmax) ii) Cpk(145 dBmax)	130.2 153.0 130.3 152.6
49	49	Deluxe Crackers, Sivakasi	Deluxe Crackers (24 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) A1(118.4 dBmax) ii) Cpk(138 dBmax)	109.1 131.6 118.3 138.0

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SAMPLE COLLECTED FROM MARKET-2014

Annexure I

Sr No	Sample No	Manufacturer	Name of Brand	Name of Shop	Purchase by/team	Purchase date	Tested on	Sound Level Results	
								Standard	Observed Value
50	50	Standard Fireworks Pvt. Ltd; Sivakasi	Electric Crackers (24 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) AI(118.4 dBmax) ii) Cpk(138 dBmax)	AI 101.2 Cpk 119.9 133.2
51	51	-----Do-----	Electric Crackers (28 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) AI(117.7 dBmax) ii) Cpk(137.7 dBmax)	124.6 118.6 140.0
52	52	Dinesh Fireworks Sivakasi	Golden Deluxe (20 Wala) Garland	---Do---	---Do---	---Do---	---Do---	i) AI(118.4 dBmax) ii) Cpk(138.4 dBmax)	126.8 126.2 147.1 147.5

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