

# **DEATHS DUE TO UNINTENTIONAL INJURY FROM EXPLOSIONS**

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## **Abstract**

In 2004, 150 people died of unintentional injury due to explosions. Another 28 people died of rupture or explosion of pressurized device.

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**In 2004, 150 people died of unintentional injuries because of explosions.**

From 1980 to 1998, unintentional-injury deaths due to all types of explosions (excluding ruptures or pressurized devices) declined by 54%. In the same period, deaths due to gas explosions declined by 58%, and explosions due to explosions other than gas explosions and fireworks declined by 56%. Fireworks-related deaths showed no clear trend.

Deaths due to all types of explosions have showed no clear trend up or down since 1998. (See Table 1.)

An additional 28 people died in 2004 as the result of explosion or rupture of pressurized device. Of these 28 deaths, 12 involved gas cylinders; nine involved tires, pipes, or hoses; five involved boilers; and two involved other pressurized devices.

Statistics are taken from the national death certificate database. External cause of injury codes W39 and W40 are for unintentional-injury deaths due to fireworks explosions and other explosions, respectively. Codes W35-W38 are for rupture or explosion of pressurized devices and are not included in the total on Table 1.

The preferred NFPA definition of explosion is “the sudden conversion of potential energy (chemical, mechanical or nuclear) into kinetic energy that produces and violently releases gas” (from NFPA 69, *Standard on Explosion Prevention Systems*). A secondary definition for NFPA is “the bursting or rupture of an enclosure or a container due to the development of internal pressure from a deflagration” (from NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*).

Every year, explosions are involved in many of the largest-loss U.S. fires. Historically, most of the deadliest fires and explosions in the U.S. have involved coal mines (typically involving explosions) or steamships (typically involving a boiler explosion or rupture).

Deaths due to fires that cause or are caused by explosions probably are not reflected here but will be coded under codes X01-X09 for fires. See John R. Hall, Jr., *Fireworks*, NFPA Fire Analysis and Research Division, Quincy, MA, April 2007 for more discussion of fireworks-related fires and deaths.

Source: National Safety Council, *Accident Facts and Injury Facts*, 1981-2007 editions, 1121 Spring Lake Drive, Itasca, IL 60143; and <http://www.cdc.gov/nchs>.

**Table 1. Unintentional Injury Deaths Due to Explosions**

<b>Year</b>	<b>Fireworks</b>	<b>Gas Explosion</b>	<b>Other Explosion</b>	<b>Total Explosions</b>
1980	10	142	187	339
1981	4	163	184	351
1982	5	123	150	278
1983	13	112	139	264
1984	7	114	126	247
1985	11	138	147	296
1986	8	116	118	242
1987	5	108	103	216
1988	4	67	122	193
1989	5	101	122	238
1990	5	98	99	202
1991	4	64	114	182
1992	2	79	108	189
1993	10	59	109	178
1994	4	50	104	158
1995	2	62	106	170
1996	9	49	72	130
1997	8	57	84	149
1998	13	60	82	155

<b>Year</b>	<b>Fireworks</b>	<b>Gas and Other Explosions</b>	<b>Total Explosions</b>	<b>Rupture or Explosion of Pressurized Device</b>
1999	7	166	173	33
2000	5	167	172	30
2001	6	138	144	38
2002	5	137	142	38
2003	11	147	158	30
2004	2	148	150	28

Source: National Safety Council, *Accident Facts* and *Injury Facts*, 1981-2007 editions, 1121 Spring Lake Drive, Itasca, IL 60143; and <http://www.cdc.gov/nchs>.