

FYi



No Permit:PP13200/12/2013(032007)
October 2016:ISSN 1675-5464

Your OSH preferred partners

EXPLOSIVES SAFETY

- ◆ **RD_X (CYCLONITE)**
- ◆ **BURSTING CHARGE EXPLOSIVES**
- ◆ **AMATOL**
- ◆ **EXPLOSIVE D (AMMONIUM PICRATE)**
- ◆ **DBX**
- ◆ **HBX**
- ◆ **HMX COMPOSITIONS**
- ◆ **PENTOLITE**
- ◆ **PICRATOL**
- ◆ **RD_X COMPOSITIONS**
- ◆ **TETRYTOL**
- ◆ **TRINITROTOLUENE (TNT)**
- ◆ **TORPEX**
- ◆ **TRIGONOL**
- ◆ **PLASTIC BONDED EXPLOSIVES**
- ◆ **BLACK POWDER**
- ◆ **NITROGLYCERIN**
- ◆ **SOLID PROPELLANTS**
- ◆ **MILITARY PYROTECHNICS**
- ◆ **HEXACHLOROETHANE (HC) SMOKE MIXTURES.**
- ◆ **THERMITE**



.... cont from the previous issue FYI September 2016.
The article covered Explosives Safety



EXPLOSIVES SAFETY



RDX (CYCLONITE)

RDX is a white crystalline solid. It is usually in mixtures with other explosives, oils, or waxes and is rarely used alone. It has a high degree of stability in storage.

BURSTING CHARGE EXPLOSIVES

Bursting charge explosives include explosive D (ammonium picrate), amatol, picric acid, TNT, tetrytol, pentolite, picratol, tritonol, RDX compositions, HMX compositions, torpex, DBX, and HBX. Alkaline cleaning agents or other alkaline products shall not be permitted in buildings where bulk high explosives are handled.

AMATOL

Amatol is a mixture of TNT and ammonium nitrate in various percentages. It is mixed at the time of loading and there should be no occasion for storing it in bulk form. In general, the sensitivity is slightly less than TNT. Deluge systems controlled automatically by quick-acting detectors are desirable to protect melting units and other process machinery. It is believed to form sensitive compounds with copper and brass.

EXPLOSIVE D (AMMONIUM PICRATE)

Ammonium picrate is stored in the same manner as TNT, but is less hazardous. Lead in any form shall not be permitted in buildings where this explosive is handled. Sprinkler and deluge systems are recommended in connection with drying and assembling processes but lead fusible links and solder type heads shall not be used in the systems. Sprinkler and deluge systems will be of service in preventing the spread of fires rather than extinguishing fires in the burning material. Fire involving large quantities of this material may result in an explosion. Cleanliness in all processes involving the handling of this material should be assured. Special precautions must be taken against its toxicity. Ammonium picrate is soluble in water.

DBX

DBX is an aluminized explosive which closely resembles torpex in sensitivity, strength, and brisance. DBX is somewhat hygroscopic and reacts with metals in the same manner as amatol.

HBX

HBX is an aluminized explosive having the same order of sensitivity as composition B. Like certain torpex explosives, HBX may produce pressure within a casing due to reaction with water to produce gassing.

HMX COMPOSITIONS

HMX is of the same order of sensitivity to impact and friction as RDX, but is more stable and has a higher explosion temperature test value than RDX. HMX compositions (mixtures of HMX, other explosives ingredients, and desensitizers and plasticizers) are used where special requirements exist for powerful explosives with a high degree of thermal stability.

PENTOLITE

Pentolite is a mixture of PETN and TNT. Pentolite may have a tendency to separate into its ingredients, consequently, pentolite should be handled as carefully as PETN. Pentolite lumps found in screen operations should not be broken with the aid of handtools or by rubbing through the screen. Melt units for pentolite should be steamed out at least once every 24 hours. Acetone should not be used for thread cleaning.

PICRATOL

Picratol is a mixture of TNT and explosive D (ammonium picrate). It has the same general properties as TNT. All the precautions made necessary by the characteristics of TNT and ammonium picrate must be observed in the handling of picratol. h. Picric acid. Picric acid which is used in the manufacture of ammonium picrate is a nitrated product of phenol. It may be stored either

wet or dry in magazines. It is highly acidic and corrosive as well as a toxic hazard. The hazards of manufacture include those of handling its various raw material components. Drowning, deluge, and automatic sprinkler systems are successfully used in combating fires in the manufacture and handling of this material. Fires involving picric acid may be extinguished with automatic sprinkler systems. Large quantities have burned completely without explosions; however, the possibility of detonation should not be overlooked. In the nitration process, ample ventilation must be provided. Lead compounds with picric acid are very dangerous and lead in any form shall not be permitted in buildings where it may contact picric acid. Picric acid is lemon yellow in color, slightly soluble in water, and soluble in organic solvents. It stains the skin and hair of workers, and colors clothing and whatever else it contacts. It is stable and has no tendency to decompose at temperatures normally encountered in storage.

RDX COMPOSITIONS

RDX compositions are mixtures of RDX, other explosive ingredients, and desensitizers or plasticizers. The RDX compositions most frequently encountered are :

- (1) Composition A-5.
- (2) Composition B-4.
- (3) Composition C-4.

TETRYTOL

Tetrytol is a mixture of tetryl and TNT, intermediate to tetryl and TNT in sensitivity. Care must be taken in the manufacture and subsequent use of tetrytol to ensure a uniform mixture and to avoid a partial segregation of tetryl which would increase its sensitivity over that normally expected. Tetrytol is stable in storage but exudes at 65 degrees Celsius (149 degrees Fahrenheit). Magnesium-aluminum alloys are slightly corroded by dry tetrytol. Wet tetrytol will slightly corrode copper, brass, aluminum, magnesium, magnesium-aluminum alloy, mild steel, and mild steel plated with cadmium.

TRINITROTOLUENE (TNT)

TNT is a light brown or straw-colored material whose appearance varies with the degree of purity. It is insoluble in water but soluble in ether, acetone, alcohol, and the like. Although TNT is less sensitive to friction and impact than many other high explosives, it can be detonated by moderate force when confined between metal surfaces such as on threads of bolts, etc. In thin unconfined layers it usually burns without explosion. Burning or rapid heating under confinement may cause detonation. TNT is stable and does not form sensitive compounds with metals. It will, however, form sensitive materials in the presence of alkalis. TNT exhibits well-recognized toxic properties.

TORPEX

Torpex is an aluminized explosive used mainly in underwater ordnance. Torpex is nonhygroscopic and noncorrosive. It is stable in storage although it may gas (hydrogen) and produce pressure in its casing as a result of the gas. Precautions must be taken in the manufacture and loading of torpex to avoid inclusion of moisture.

TRIGONOL

Trigonol is a mixture of TNT and aluminum powder and exhibits a greater blast effect than TNT or Composition B. It is more sensitive to impact than TNT. Because of the aluminum content, the inclusion of moisture into the mixture must be avoided.

PLASTIC BONDED EXPLOSIVES

Plastic bonded explosives are conventional high explosives with plastic binders (i.e., polystyrene, viton, estane). Their sensitivity varies with the type of explosive and the amount of binder used. The series most frequently encountered are identified by prefix LX or PBX followed by a number. Propellants and Other Explosives.

BLACK POWDER

Black powder is an intimate mechanical mixture of potassium or sodium nitrate, charcoal, and sulfur. It is very sensitive to friction, heat, and impact. These properties make black powder one of the most dangerous explosives to handle. It will deteriorate rapidly on absorption of moisture but retains its explosives properties indefinitely if kept dry. Black powder may be desensitized by placing it in water and discarding the water separately from the residue, for wet black powder when permitted to dry out may regain its explosive properties. Combustible materials which have absorbed liquors leached from black powder constitute a severe fire hazard and may become explosive. In black powder manufacture and operations, it is essential that special attention be given to dust prevention and control, and to the prevention of contamination. Permanent magnet type separators have been found effective in controlling contamination. Deluge systems are of value in preventing the spread of fire in black powder operations. Lumber or combustible material from black powder buildings must not be released for reuse.

NITROGLYCERIN

Nitroglycerin is usually manufactured only as required in the manufacture of other products of which it is a constituent. It is stored only in buildings constructed for the specific purpose, where it must be kept under constant surveillance until used. Nitroglycerin is extremely sensitive to impact and friction and the manufacturing processes are hazardous. All machinery, equipment, and tools used are specifically designed for the particular process and with full consideration of safety features. Buildings in which nitroglycerin vapor is present may become dangerously contaminated and frequent cleaning of the building and equipment with a neutralizing solution is required. The vapor is also toxic. Frozen nitroglycerin is less sensitive than the liquid compound; however, upon thawing, it may produce internal changes accompanied by sufficient evolution of heat to cause explosion. Nitroglycerin containing moisture or decomposition products can explode at temperatures lower than the explosion temperature at 220 degrees Celsius (428 degrees Fahrenheit) for pure nitroglycerin. The lower temperature of 41 degrees Celsius (105 degrees Fahrenheit) applied to a sample for 5 hours results in slow decomposition until an explosion occurs.

SOLID PROPELLANTS

Solid propellants used by the military include single base, double base, triple base, and composite types. Solid propellants are a severe fire hazard. They burn rapidly and under suitable conditions of initiation some may detonate. Solid propellants that are sufficiently sensitive to initiation to detonation by fire or explosion are included in hazard class 1.1, while those of lesser sensitivity to such stimuli are included in class 1.3. Propellant dust and powder normally are sensitive to friction, flame, and sparks. The stability of propellants can be adversely affected if they are stored for long periods in a damp atmosphere and/or subjected to high temperatures; the eventual effect of such conditions may be the spontaneous ignition of the propellant. The stabilizer level of all nitrocellulose-based propellant in storage must be determined to ensure it is safe for continued storage.

MILITARY PYROTECHNICS

Military pyrotechnic compositions in general consist of such compounds as perchlorates and nitrates to provide oxygen; powdered metals for fuel; salts of sodium, barium, or strontium for color; and binding and waterproofing materials. They are sensitive to heat, flame, static electricity discharges, and particularly to friction. Compositions containing chlorates are especially hazardous. Since pyrotechnic compositions contain powdered metals, they may become hazardous in the presence of moisture. Compositions in process, and pyrotechnics in storage, must be protected from moisture, and items showing evidence of moisture should be destroyed.



HEXACHLOROETHANE (HC) SMOKE MIXTURES.

HC smoke mixture is sensitive to heat, flame, friction and static electrical discharges from the human body. HC mixtures react with moisture to produce heat, and in some cases, hydrogen gas; therefore, the use of small quantities of water on a fire in HC smoke mixtures is dangerous. Large quantities of water will effectively reduce the severity of fires. Firefighters must avoid breathing heavy concentrations of HC smoke. HC smoke pots must not be used inside buildings to simulate fire during fire drill demonstrations.

THERMITE

Thermite is a fire hazard. Fires are extremely difficult to extinguish when thermite is ignited. Control frequently lies in holding fires in check until the thermite has burned itself out.

(to be continued in the next issue...)



By
Abd Razak bin Abdul Majid
(Retired Major RMAF ato)
mil_razak@hotmail.com

MAJLIS MENANDATANGANI MEMORANDUM PERSEFAHAMAN PERJANJIAN (MOU) DI ANTARA NIOSH DENGAN KUALITI ALAM SDN BHD

Majlis Menandatangani MoU di antara NIOSH dan Kualiti Alam Sdn Bhd telah diadakan dengan jayanya pada 14 Oktober 2016 bertempat di Pejabat Kualiti Alam di mana majlis tersebut dihadiri oleh Pengarah Eksekutif NIOSH, Tn Haji Zahrim Osman dan Pengurus Besar Jabatan ETDRO NIOSH, Mejar (B) Hj Hanif Maidin.

MoU ini telah ditandatangani oleh Pengarah Eksekutif NIOSH, Tn Haji Zahrim Osman dan En. Khalid Bahsoon, Pengarah Kualiti Alam Sdn Bhd dengan disaksikan oleh Mejar (B) Hj Hanif Maidin (B), Pengurus Besar Jabatan ETDRO NIOSH dan En. Muhammad Fauzan Baharudin, Pengurus Security, S.H.E., Fire Hazmat Kualiti Alam.

Skop kerjasama selama tiga (3) tahun ini adalah di dalam melatih kakitangan dan kontraktor Kualiti Alam tentang cara kerja yang selamat dan sihat serta persetujuan dari pihak Kualiti Alam untuk menjadi penaja bagi program COSH untuk tiga tahun berturut-turut bermula dari tahun 2015 – 2017.



HARI KELUARGA NIOSH 2016

Pada 22-23 Oktober 2016, KCSI NIOSH telah menganjurkan Hari Keluarga di Marina Island Pangkor Resort & Hotel di Telok Muroh, Lumut, Perak. Seramai 800 orang keluarga besar NIOSH telah hadir bagi memeriahkan sambutan Hari Keluarga NIOSH. Anjuran Hari Keluarga ini turut dimeriahkan dengan pelbagai aktiviti seperti sukan, makan malam, cabutan bertuah, dan pelbagai aktiviti-aktiviti menarik.

Hari Keluarga NIOSH 2016 kali ini bertemakan 'Go Green, Save The Nature' bagi memupuk generasi terkini dan masa depan supaya mencintai alam sekitar. Semua lapisan masyarakat haruslah bekerjasama dan saling membantu dalam memelihara alam sekitar supaya kebersihan alam sekitar dapat ditingkatkan dalam kehidupan kita. Penanaman tumbuhan hijau bukan sahaja memberi suasana persekitaran yang sejuk dan nyaman, malah berfungsi menstabilkan suhu persekitaran. Penanaman pokok-pokok ini juga bertujuan mengurangkan kesan pemanasan global melalui penyerapan karbon dioksida.

Program 'Grand Dinner' yang bermula seawal jam 8.00 malam ini telah mendapat sambutan yang amat menggalakkan daripada staf dan ahli keluarga. Ini membuktikan warga NIOSH sangat komited bukan sahaja dengan tugas di pejabat, malah sangat menyokong segala aktiviti di luar pejabat.

Acara kemuncak pada malam tersebut adalah acara pakaian paling cantik dan menarik bagi kategori lelaki dan wanita serta sesi penyampaian anugerah kepada Keluarga Sedondon.

Sambutan Hari Keluarga ini telah dirasmikan oleh Haji Zahrim Osman, Pengarah Eksekutif NIOSH yang mana dalam ucapan beliau menekankan bahawa pentingnya semangat kekeluargaan, kekitaan dan keakraban di kalangan warga kerja. Turut hadir dalam majlis tersebut Pengerusi NIOSH Tan Sri Datuk Seri Lee Lam Thye yang pertama kali menyertai Hari Keluarga NIOSH pada tahun ini.

Selain itu, majlis turut mengadakan penyampaian sumbangan cenderahati kepada warga kerja yang berkhidmat di NIOSH 10 tahun dan 20 tahun. Sumbangan ini diberikan bagi menghargai sumbangan dan jasa kakitangan yang selama ini menabur bakti bagi pembangunan NIOSH sehingga berada di tahap sekarang. Pada hari kedua program diteruskan dengan acara sukaneka untuk kanak-kanak dan orang dewasa pada sebelah pagi.

Semoga sambutan hari keluarga ini dapat merapatkan lagi ikatan ukhuwah antara warga NIOSH dan keluarga masing-masing dan adalah menjadi harapan agar sambutan seumpama ini dapat dianjurkan pada tahun-tahun akan datang.



→ KEMALANGAN

Lelaki maut, tangki NGV meletup

Polis minta orang ramai henti sebar spekulasi tidak benar berkaitan kejadian

Oleh Mohd Fahmi Mohd Yusof
mohdfahmi@bh.com.my

Johor Bahru

Seorang lelaki maut selepas tangki gas asli untuk kereta (NGV) di stesen minyak di Austin Height, Mount Austin di sini, meletup, semalam.

Mohd Faizal Mazlan, 33, pekerja kontraktor pembaikan pam, berada berhampiran ketika tangki itu meletup yang turut menyebabkan kebakaran kira-kira jam 3 petang.

Maut di tempat kejadian

Mangsa meninggal dunia di tempat kejadian dan mayatnya dihantar ke Hospital Sultan Ismail untuk bedah siasat.

Pegawai Pertahanan Awam, Angkatan Pertahanan Awam Malaysia

(APM) Daerah Johor Bahru, Mohd Azri Jupri, berkata pihaknya menerima panggilan berhubung kecamaran seguras kejadian itu.

Sebuah ambulans, kenderaan pacuan empat roda dan dua motosikal membabitkan 13 anggota diberah ke lokasi untuk operasi menyelamat.

Tiada unsur jenayah

"Jabatan Bomba dan Penyelamat Malaysia mrasih menyiasat punca kejadian," katanya.

Sementara itu, Ketua Polis Johor Datuk Wan Ahmad Najmuddin Mohd, berkata kejadian tidak ada kaitan dengan sebarang unsur jenayah.

Katanya, ia juga tidak kaitan dengan kebakaran di Hospital Sultan Aminah (HSA).

"Tidak ada kaitan, ini berkeungkinan akibat keculian di pihak sana, kita tidak tahu," katanya kepada pemberita seguras meletup mangsa dalam kebakaran di HSA.

Wan Ahmad Najmuddin turut meminta orang ramai tidak membuat sebarang spekulasi mengenai kedua-dua insiden berkenaan.

"Tolong hentikan (spekulasi), ia masih dalam siasatan dan kita belum tahu punca sebenar (kedua-dua kejadian)," katanya.



Keadaan tangki NGV di sebuah stesen minyak meletup dan terbakar di Austin Height, Mount Austin, Johor Bahru, semalam.

LELAKI MAUT, TANGKI NGV MELETUP

Publication: Berita Harian
Date of Publication: 26 October 2016
Page number: 30

Buat kajian menyeluruh

KUALA LUMPUR 25 Okt. - Pihak pengurusan Hospital Sultanah Aminah (HSA), Johor Bahru perlu melakukan kajian menyeluruh mengenai kebakaran yang membabitkan wad Unit Rawatan Rapi (ICU) di tingkat dua bangunan utama hospital berkenaan pagi ini.



LEE LAM THYE

Pengerusi Institut Keselamatan dan Kesihatan Pekerjaan Negara (NIOSH), Tan Sri Lee Lam Thye berkata, kajian tersebut bertujuan menentukan sama ada prosedur keselamatan dipatuhi secukupnya ataupun tidak.

"Setiap hospital perlu mempunyai tahap keselamatan dan kesihatan pekerjaan (OSH) yang tinggi bagi menjamin keselamatan semua pesakit, pelawat dan pekerja," katanya dalam satu kenyataan di sini hari ini.

Pelan strategik tangani masalah kesihatan mental

KUALA LUMPUR 4 Okt. - Keputusan Kementerian Kesihatan untuk merangka Pelan Tindakan Strategik Kesihatan Mental Kebangsaan bagi tempoh lima tahun akan datang merupakan satu tindakan yang tepat memandangkan terdapat peningkatan dalam isu yang melibatkan masalah mental di negara ini.



LEE LAM THYE

Pelan yang bermula pada tahun ini sehingga 2020 itu bukan sahaja menjadi satu pelan komprehensif yang merangkumi strategi pelbagai program dan langkah berkesan untuk menangani masalah kesihatan mental dalam kalangan rakyat di negara ini, malah turut menggariskan petunjuk prestasi utama (KPI).

Pengerusi Institut Keselamatan dan Kesihatan Pekerjaan Negara (NIOSH), Tan Sri Lee Lam Thye berkata, isu kesihatan mental tidak boleh dipandang ringan kerana statistik menunjukkan berlaku peningkatan masalah mental terutama melibatkan golongan yang masih muda.

Malah katanya, Jabatan Pekar Pulihari Hospital Tunku Faizmah, Petlis juga memaklumkan penyakit mental dijangka menjadi penyakit kedua tertinggi yang dihadapi rakyat negara ini selepas penyakit jantung menjelang tahun 2020.

"Mengikut Tinjauan Kesihatan dan Morbiditi Kebangsaan 2005, beban peningkatan masalah kesihatan mental yang melibatkan remaja berusia 16 tahun ke atas, ia telah meningkat kepada 29.2 peratus tahun lalu daripada 11.2 peratus pada tahun 2006.

"Ini memunculkan sebarang daripada tiga orang dewasa di negara ini mengalami masalah kesihatan mental, sama ada mereka sedar atau tidak. Ragi selidik yang sama juga mendapati 20 peratus daripada kanak-kanak berusia lima hingga 15 tahun mengalami masalah kesihatan mental seperti gangguan pernafsaan, emosi dan tingkahlaku," katanya dalam satu kenyataan di sini hari ini.



Standard two pupil stuck in drain rescued by firemen

KUALA: A Standard Two pupil was stuck in a 6cm deep drain at his school here for about 20 minutes yesterday afternoon after retrieving his pocket money that had fallen into it.

Fire and Rescue

Nation chief Assistant Superintendent Zaidi Akbar said the incident took place at SK Batu Belah at 1pm.

"The victim refused to going into the drain after falling to retrieve his pocket money, which had fallen inside it, by reaching in with his hands

through the grills covering the drain.

"However, after retrieving his money, he couldn't get out of the drain. He panicked and cried. Teachers who were alerted about the incident contacted us," he said.

"When we arrived at the scene, we saw the victim stuck fast on his side in the drain."

He said the victim was extricated after firemen pried open the grill.

Zaidi added the pupil did not sustain any injuries. **Berita Harian**

PELAN STRATEGIK TANGANI MASALAH KESIHATAN MENTAL

Publication: Utusan Malaysia
Date of Publication: 8 October 2016
Page number: 07

STANDARD TWO PUPIL STUCK IN DRAIN RESCUED BY FIREMEN

Publication: News Straits Times
Date of Publication: 12 October 2016
Page number: 22

Disclaimer

©Copyright 2016. National Institute of Occupational Safety and Health Malaysia. All rights reserved. No part of this publication may be reproduced, stored in retrieval system, or transcribed in any forms or by any means, electronic, photocopying, or otherwise, without the prior written permission of the copyright owner.

INSTITUT KESELAMATAN DAN KESIHATAN PEKERJAAN NEGARA
KEMENTERIAN SUMBER MANUSIA
NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH MALAYSIA (NIOSH)

Lot 1, Jalan 15/1, Section 15, 43650 Bandar Baru Bangi, Selangor Darul Ehsan
Tel: 03-8769 2100 Fax: 03-8926 5655
www.niosh.com.my