

Vehicle Inspection Checklist A

Inspection Checklist for Package and/or Bulk Transportation.

Prime mover and trailer (bulk tank, ISO tank).

Road tanker (single entity lorry).

Prime mover and trailer (trucking container containing petroleum or Flammable materials in package, examples drums, bottles, pallets etc).

* Transport of petroleum and flammable materials in bulk means transport of petroleum and flammable materials in container more than 250 litres water capacity.

S/No.	Technical Requirements
1	Exhaust system in order.
2	Fire shield at rear of cabin provided & in order.
3	Battery cut off is functioning as intended.
4	Discharge faucets in order.
5	Emergency cut off for tanker in working order.
6	Transport Emergency Information Panel (TEIP) according to Singapore Standard 586 shall be displayed at the back and both sides of the vehicle.
7	Warning sign “Danger, Highly Flammable” according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle.
8	Bumper (heavy duty steel) 15 cm from tank.
9	Earthing strap provided and long enough to touch the ground.
10	Metal conduits for all wirings in good condition.
11	Manhole covers in order.
12	Coaming satisfactory and projected at least 25 mm above manhole covers.
13	Pressure, level & temperature gauges provided.
14	Safety relief valves provided.
15	Proper battery compartment.
16	Vehicle is equipped with one 9 KG dry powder fire extinguisher and i) 1 x 1 KG dry chemical fire extinguisher, OR ii) 1 x 2.3 KG dry carbon dioxide fire extinguisher

Vehicle Inspection Checklist B

Inspection Checklist for Package and/or Bulk transportation.

Vehicles constructed to carry goods (e.g. lorries, pick-ups).

* Transport of petroleum and flammable materials in package means transport of any petroleum or any flammable materials in one or more containers of less than 250 litres water capacity.

* Vehicles used for transport of flammable gases must not have a roof covering.

S/No.	Technical Requirements
1	Platform of the vehicle is lined with timber or is timber constructed to minimize contact between the metal parts of the platform and any container.
2	Protective railings lining the platform of the vehicle are at least 1 m in height to secure any container and to prevent such container from falling off the vehicle when the vehicle is in motion.
3	Glass at the back of the driver cabin, if any, is of wired glass or toughened or safety of not less than 6 mm in thickness to act as a fire resisting shield.
4	Battery is covered with appropriate insulation material to prevent electrical spark from igniting any flammable vapor from any container.
5	Earthing strap provided and long enough to touch the ground.
6	Exhaust pipe is extended at least 150 mm outwards away from the vehicle tail box or is directed downward to keep vehicle exhaust away from any container.
7	Warning placard according to Singapore Standard 586 shall be displayed at the front, both sides and the back of the vehicle.
8	Warning sign “Danger, Highly Flammable” according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle.
9	Vehicle is equipped with one 9 KG dry powder fire extinguisher and i) 1 x 1 KG dry chemical fire extinguisher, OR ii) 1 x 2.3 KG dry carbon dioxide fire extinguisher.

Vehicle Inspection Checklist C

Inspection Checklist for Package transportation.

Enclosed Vehicles (e.g. Van or Boxed-up vehicle).

* Transport of petroleum and flammable materials in package means transport of any petroleum or any flammable materials in one or more containers of less than 250 litres water capacity.

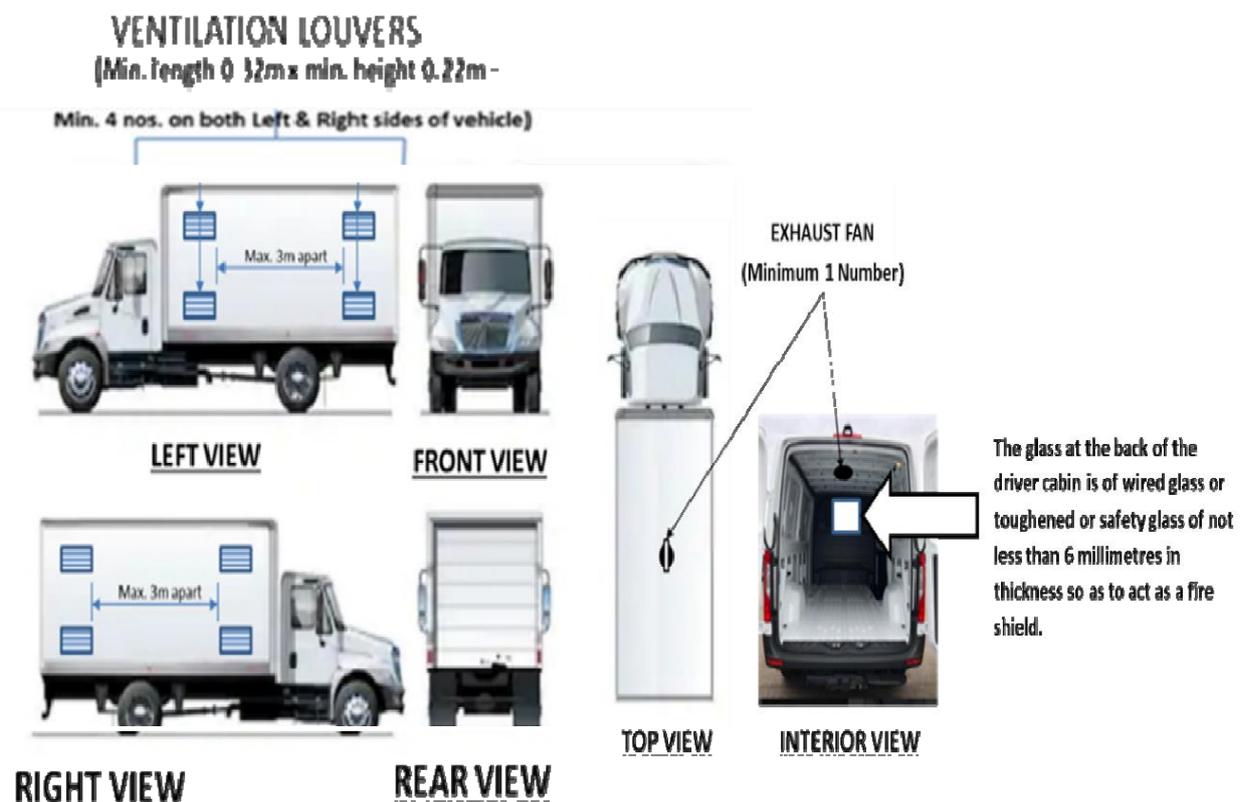
S/No.	Technical Requirements
1	Adequate ventilation shall be provided on top and bottom (louvres) and exhaust fan according to Petroleum & Flammable Material Regulations.
2	Platform of the vehicle is lined with timber or is timber constructed so as to minimize contact between the metal parts of the platform and any container.
3	Battery is covered with appropriate insulation material to prevent electrical spark from igniting any flammable vapor from any container.
4	Exhaust pipe is extended at least 150 mm outwards away from the vehicle tail box or is directed downward to keep vehicle exhaust away from any container.
5	Warning placard according to Singapore Standard 586 shall be displayed at the front, both sides and the back of the vehicle.
6	Warning sign “Danger, Highly Flammable” according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle.
7	Vehicle is equipped with one 9 KG dry powder fire extinguisher and i) 1 x 1 KG dry chemical fire extinguisher, OR ii) 1 x 2.3 KG dry carbon dioxide fire extinguisher

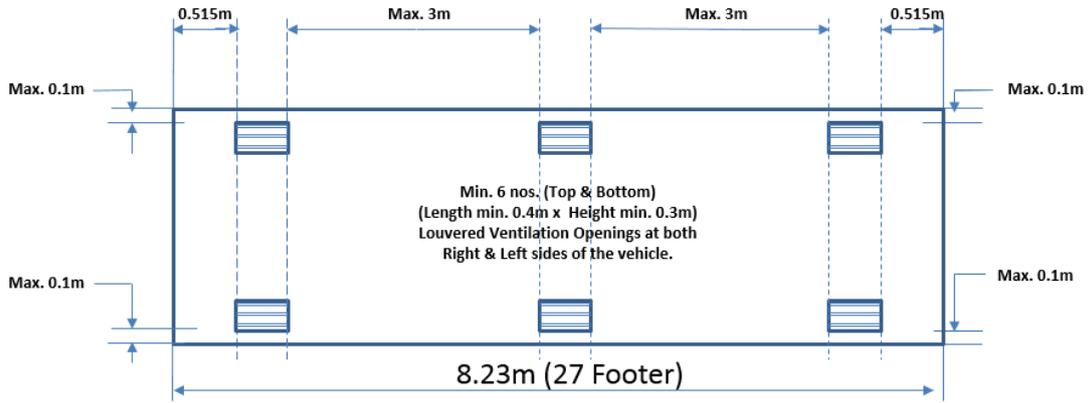
Vehicle Inspection Checklist C

Apart from the opening on top behind the driver's cabin, please see our requirement:

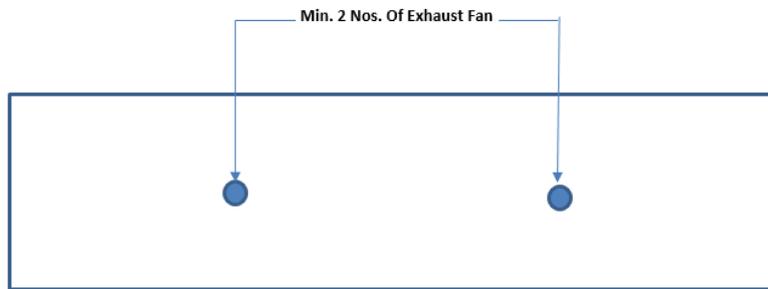
- 1 Only Class 3 FM Liquid/Petroleum & Class 4 Solids are permitted to be transported in a boxed-up/enclosed vehicle with:
 - Adequate ventilation shall be provided to prevent accumulation of any flammable vapours in the vehicle.
 - Spacing between ventilation louvers (top and bottom) shall not exceed 3 m horizontally.
 - Exhaust fan to circulate air inside the vehicle.
 - The glass at the back of the driver cabin is of wired glass or toughened or safety glass of not less than 6 mm in thickness to act as a fire shield.

- 2 **Class O Petroleum** and/or **Class 2.1 Flammable Gas** are not permitted to be transported in a boxed-up vehicle or vehicle with roof covering whether permanent or otherwise.

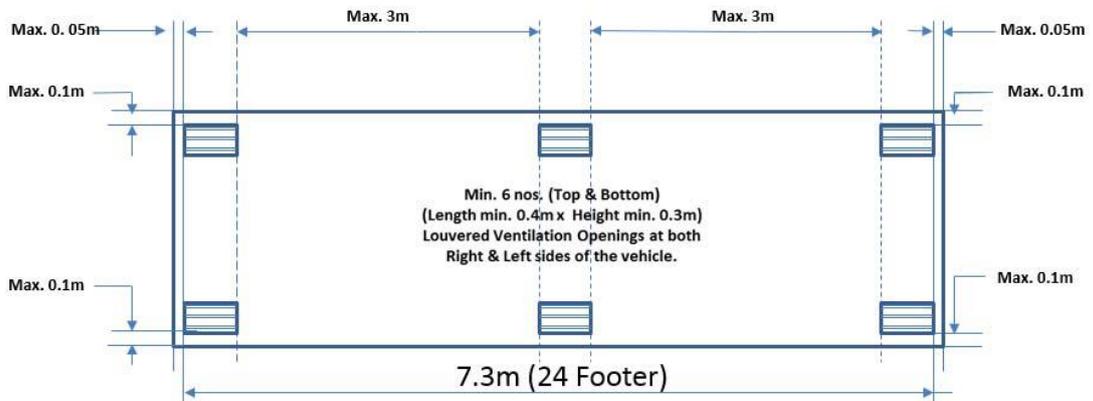




SIDE VIEW



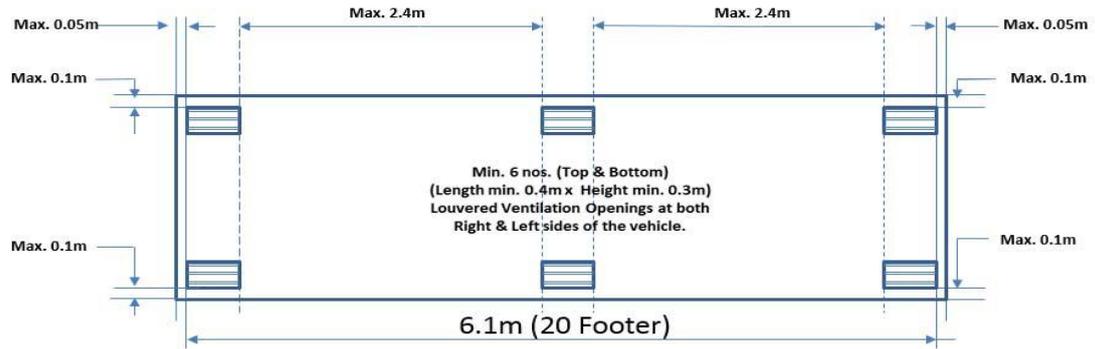
TOP VIEW



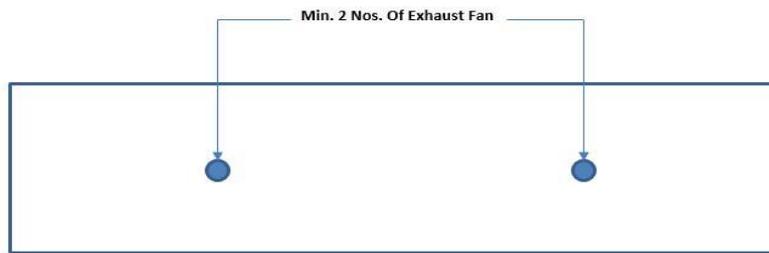
SIDE VIEW



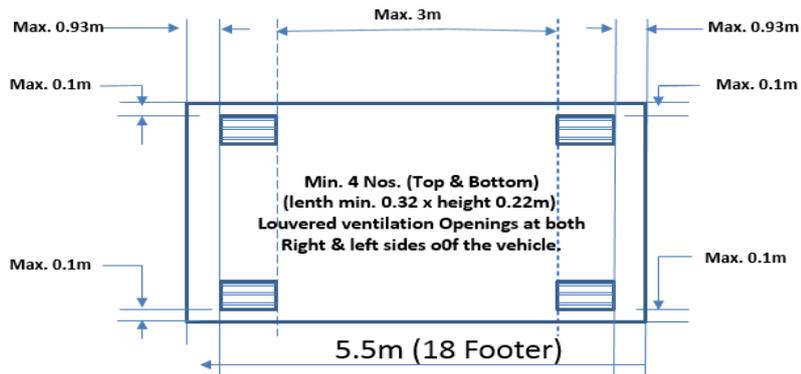
TOP VIEW



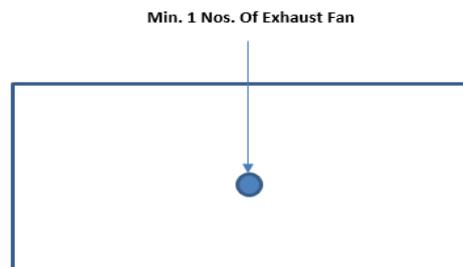
SIDE VIEW



TOP VIEW



SIDE VIEW



TOP VIEW

Vehicle Inspection Checklist D

Inspection Checklist for LNG transportation.

Vehicles (e.g. Prime Mover, Trailer and Road Tanker).

S/No.	Technical Requirements
1	Prime Mover/ Road Tanker equipped with ABS system.
2	Fire shield at rear of cabin provided and in order.
3	Roll Over Prevention Stability System provided.
4	Exhaust system in order (adequately shielded from direct contact with fuel from overfilled tanks and leaks).
5	Rear and side under-run protection (heavy duty steel) 15 cm from tank.
6	Metal conduits for all electrical wirings in good condition.
7	Anti-Tow Interlocks systems (to prevent driving away while connected to driving rack or during dispensing) in order.
8	Battery cut off in order / Proper battery compartment.
9	Battery is covered with appropriate insulation material to prevent electrical spark from igniting any flammable vapor from any container.
10	Transport Emergency Information panel (TEIP) complying with GHS (Warning notices) provided at 3 sides.
11	Earth winch shall be provided for operating during load and unloading of LNG.
12	Spark arrestor (Flame Trap) provided.
13	Earthing strap provided and touching the ground.
14	Visual Inspection on Outer Vessel / Tank (eg. to inspect for any sign on sweating, cold spots or algae).
15	All vent pipe nozzles are piped upwards and are not piped downwards to the chassis (LNG Trailer/ ISO Tanker).
16	Discharge Faucets in order.
17	Lighting in cabinets shall be Vapor Proof design or explosion proof design (Intrinsically safe).
18	Cabinet enclosure shall be designed with louvers.
19	Wiring circuit shall be house in steel conduits.
20	All valves and Safety pressure relief valves in working order.
21	Pressure and Level gauges in working order.
22	Vacuum reading in working order (< 20 micron).
23	Emergency cut off device in working order.
24	Pump, Vaporizer and piping yearly maintenance report (Renew).
25	Vehicle is equipped with one 9 KG dry powder fire extinguisher and i) 1 x 1 KG dry chemical fire extinguisher, OR ii) 1 x 2.3 KG dry carbon dioxide fire extinguisher

ANNEX E

Astrata Installation / Inspection

Note that vehicles are required to install **Tracking Devices, Immobilizer, Horns & Blinkers and an Orange-coloured vehicle licence plate** if the following conditions are met:

- Transporting 3 Metric Tonnes (MT) or more of Petroleum and/or Flammable Materials (P&FM).
- Transporting Hydrogen, Silane and Compressed Natural Gas (CNG) in tubes (regardless of quantity).

3 MT refers to 3000 Kilograms (KG) or 3000 Litres (L) with reference to the physical state of the regulated chemical (i.e. Litres for Petroleum and Liquid; KG for Liquified Petroleum Gas [LPG], Gaseous Flammable Material [FM] & Solid FM). Vehicle owners can liaise with the agent directly for the installation of the above-mentioned items.

Foreign vehicles transporting 3 MT (net weight) or more of P&FM **OR** Hydrogen, Silane & CNG in tubes (regardless of quantity) will also need to comply with the above requirements. Failing to do so will result in vehicles having to turn back at Tuas checkpoint.

Vehicles installed with tracking devices are to strictly adhere to the approved routes and transportation hours (refer to SCDF transport circular). For more details on Transport requirements of Petroleum and Flammable Materials, please visit:

P&FM Transport Licence

S/No.	Astrata (Asia Pacific) PTE LTD
1	<p>Installation of the following items:</p> <ul style="list-style-type: none">▪ Orange-coloured licence plate▪ Tracking Device▪ Immobilizers▪ Blinkers▪ Horn <p>Address: BLK 750E Chai Chee Road (Estuary Building) #05-02 Technopark Chai Chee Singapore 469005</p> <p>Telephone: +65 6338 8133 Fax: +65 6338 5373</p>

**Transport Inspection Bodies for Petroleum & Flammable Materials
(P & FM) Vehicle Inspection**

S/No.	Inspection Bodies	Checklist A	Checklist B	Checklist C	Checklist D
1	Apave TIV Asia PTE LTD 450 Alexandra Road #04-01, UE Bizhub West Singapore 119960	✓			✓
2	Bureau Veritas 28 Ayer Rajah Crescent #04-01 Singapore 139959	✓			✓
3	VICOM Inspection Centre (Changi) 20 Changi North Crescent Singapore 499613 VICOM Inspection Centre (Kaki Bukit) 23 Kaki Bukit Avenue 4 Singapore 415933 VICOM Inspection Centre (Yishun) 501 Yishun Industrial Park A Singapore 768732 VICOM Inspection Centre (Sin Ming) 385 Sin Ming Drive Singapore 575718 VICOM Inspection Centre (Bukit Batok) 511 Bukit Batok Street 23 Singapore 659545			✓	
4	JIC (Pioneer) 2E Jalan Papan Singapore 619835	✓	✓	✓	
5	STAI (Jalan Boon Lay) 249 Jalan Boon Lay Singapore 619523	✓	✓	✓	
6	STAI (Sin Ming) 302 Sin Ming Road Singapore 575627		✓	✓	

Checklist A: Inspection for Bulk and/or Package transportation for Prime Movers, Trailers, Road Tankers.

Checklist B: Inspection for Bulk and/or Package transportation for Lorries, Pick-ups etc.

Checklist C: Inspection for Package transportation for Enclosed Vehicles.

Checklist D: Inspection of LNG transportation for Prime Mover, Trailer, Road Tanker.

SCHEDULE CHEMICALS

S/N	Chemical	Schedule	Transport Licence Duration and Additional Conditions	Documents and Technical Requirements
1	O-Alkyl ($\leq C_{10}$, including cycloalkyl) N, N- dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidocyanidates	S1A		Prime Mover/Trailer (BULK/ISO TANK)/ Road Tanker – To follow Annex A
	E.g. Tabun: O-Ethyl N, N-dimethyl phosphoramidocyanidate			
2	Sulphur mustards	S1A	<ul style="list-style-type: none"> • 12 months Licence only • Compulsory ASTRATA report • Compulsory to provide armed escorts • Compulsory at any one-time transport not more than 100 mg • Transport timing, 9 to 5pm only 	Prime mover and trailer (trucking container containing petroleum or Flammable materials in package, examples drums, bottles, pallets etc) – To follow Annex A Vehicles constructed to carry goods (e.g. lorries, pick-ups) – To follow Annex B Enclosed Vehicles (e.g. Van or box up vehicle) – To follow Annex C
	(a) 2-Chloroethylchloromethylsulfide			
	(b) Mustard gas: Bis(2-chloroethyl)sulfide			
	(c) Bis(2-chloroethylthio)methane			
	(d) Sesquimustard: 1,2-Bis(2-chloroethylthio)ethane			
	(e) 1,3-Bis(2-chloroethylthio)-n-propane			
	(f) 1,4-Bis(2-chloroethylthio)-n-butane			
	(g) 1,5-Bis(2-chloroethylthio)-n-pentane			
	(h) Bis(2-chloroethylthiomethyl)ether			
	(i) O-Mustard: Bis(2-chloroethylthioethyl)ether			

S/N	Chemical	Schedule	Transport Licence Duration and Additional Conditions	Documents and Technical Requirements
3	N, N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides (>30% purity)	S2B	<ul style="list-style-type: none"> 12 or 24 months subject to 3000L, similar to the rest of P&FM requirements 	<p>Prime Mover/Trailer (BULK/ISO TANK)/ Road Tanker –</p> <p>To follow Annex A</p> <p>Prime mover and trailer (trucking container containing petroleum or Flammable materials in package, examples drums, bottles, pallets etc) –</p> <p>To follow Annex A</p> <p>Vehicles constructed to carry goods (e.g. lorries, pick-ups) –</p> <p>To follow Annex B</p> <p>Enclosed Vehicles (e.g. Van or box up vehicle) –</p> <p>To follow Annex C</p>
4	N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts (>30% purity)	S2B		
5	Pinacolyl alcohol : 3,3-Dimethylbutan-2-ol	S2B		
6	Trimethyl phosphite	S3B		
7	Triethyl phosphite	S3B		
8	Dimethyl phosphite monochloride (>30% purity)	S3B		
9	Sulfur monochloride (>30% purity)	S3B		
10	Sulfur dichloride (>30% purity)	S3B		
11	Ethyldiethanolamine (>30% purity)	S3B		
12	Methyldiethanolamine (>30% purity)	S3B		

Explanatory notes

Hazardous Materials Transport Driver Permit

Drivers need to attend course and obtain a Hazardous Materials Transport Driver Permit (HTDP). To register for the HTDP course, you can choose one of the following Institutions or accredited bodies.

SCDF ACCREDITED TRAINING INSTITUTIONS (ATIs) HAZARDOUS MATERIALS TRANSPORT DRIVER COURSE (HTDC)

S/N	NAME OF COMPANY
1	ABSOLUTE KINETICS CONSULTANCY PTE LTD 64, HILLVIEW TERRACE SINGAPORE 669277 MR SETHUPATHY SRIBALASUBRAMANIAM TEL : +65 66905571 FAX : +65 67633885 EMAIL : SriBalu.S@SG-AKC.com
2	AAT TRAINING HUB PTE LTD 320 SERANGOON ROAD #11-08 @CENTRIUM SQUARE SINGAPORE 218108 MS FITRI/ MS ROKIAH TEL : +65 62924804 (EXT 807) FAX : +65 67633885 EMAIL : norfitri@aattraininghub.com ; admin@aattraininghub.com
3	ADVANTA GLOBAL PTE LTD 20 BENDEMEER ROAD, #04-06 BS BENDEMEER CENTRE, SINGAPORE 339914 (NEW HEAD OFFICE & TRAINING CENTRE) MR SRIVALLI TEL : +65 64171153 / +65 62952112 / +65 81295935 FAX : +65 62956683 EMAIL : srivalli@avanta.com.sg

S/N	NAME OF COMPANY
4	<p>BS TECHNOLOGY PTE LTD</p> <p>5, TUAS AVENUE 3, BS LOGISTICS HUB SINGAPORE 639405</p> <p>MR SRIRAM / MR HANSEN NG</p> <p>TEL : +65 64162691 / +65 64162694</p> <p>FAX : +65 62659717</p> <p>EMAIL : sriram@bokseng-ipl.com; hansen.ng@bokseng-ipl.com</p>
5	<p>COSEM SAFETY AND SECURITY SERVICES PTE LTD</p> <p>37, GUL AVENUE SINGAPORE 629677</p> <p>MS FARHANA / MS FARIDAH</p> <p>TEL : +65 68984171 (x 113) / +65 68984171 (x 112)</p> <p>FAX : +65 68982428</p> <p>EMAIL : farhanah@cosem.org.sg; training@cosem.org.sg; faridah@cosem.org.sg</p>
6	<p>HAZMAT TRAINING</p> <p>146A, CHANGI ROAD SINGAPORE 419726</p> <p>MS NG BEE HONG</p> <p>TEL : +65 65425539</p> <p>FAX : +65 65425296</p> <p>H/P : +65 96755796</p> <p>EMAIL : beehong@haz-mat-training.com</p>
7	<p>NTUC LEARNING HUB</p> <p>e2i (DEVAN NAIR INSTITUTE FOR EMPLOYMENT AND EMPLOYABILITY) 80 JUROG EAST STREET 21, #02-03, SINGAPORE 609607</p> <p>MS SERENE ONG/MS JEFEI TAN/ MS NURUL HANISAH</p> <p>TEL : +65 6705 4097</p> <p>EMAIL : FTSME@ntuclearninghub.com</p>

S/N	NAME OF COMPANY
8	<p>PIONEER TRAINING CENTRE PTE LTD</p> <p>1, SOON LEE STREET #03-49/50, PIONEER CENTRE SINGAPORE 627605</p> <p>MS WINNIE LAU</p> <p>TEL : +65 63163290 FAX : +65 63163265 H/P : +65 8338332</p> <p>EMAIL : pioneertrainingcentre2010@gmail.com; centremanager@pioneertrainingcentre.com; winnielau@pioneertrainingcentre.com</p>
9	<p>PSA INSTITUTE, PSA CORPORATION LIMITED</p> <p>PSA VISTA, #06-01, PSA HORIZONS 1 HARBOUR DRIVE SINGAPORE 117352</p> <p>MS ANGELA LOO/ MR LIONG KWOK YEAN/ MR CHAN WEI KIAT</p> <p>TEL : +65 6279 4460 FAX : +65 67717316</p> <p>EMAIL : ANGELAL@globalpsa.com; kyliong@globalpsa.com; cweikiat@globalpsa.com</p>
10	<p>TECS FIRE AND SAFETY SERVICES</p> <p>20, TOH GUAN ROAD CJ LOGISTICS BUILDING #07-02 SINGAPORE 608839</p> <p>MS NORDAYANA /MS RAHAINA</p> <p>TEL : +65 63621886 FAX : +65 63623973 H/P : +65 83839195</p> <p>EMAIL : admin3@tecs-firensafety.com.sg; am@tecs-firensafety.com.sg; tm@tecs-firensafety.com.sg; admin1@tecs-firensafety.com.sg</p>

S/N	NAME OF COMPANY
11	<p>UBTS ACADEMY PTE LTD</p> <p>821, BUKIT BATOK WEST AVENUE 5 SINGAPORE 659087</p> <p>MR JUKIT/ MS LILY CHEW / MS SIEW LEE</p> <p>TEL : +65 64256787 FAX : +65 62508218 H/P : +65 97479922</p> <p>EMAIL : training@ubts.academy ; lilychew@ubts.academy ; siewlee@ubts.academy</p>
12	<p>LIFESKILLS ACADEMY (BIZNESS & MEDIA RESOURCES PTE LTD)</p> <p>18 BOON LAY WAY #09-144 TRADEHUB21 SINGAPORE 609966</p> <p>MR JOSEPH HONG / MS SALLY HONG</p> <p>TEL : +65 68160492 H/P : +65 83337118 / +65 88112861</p> <p>EMAIL : joehong@bizmediareources.com.sg ; business@lifeskillsacademy.edu.sg</p>
13	<p>REALSAFE TRAINING CENTRE</p> <p>273 CHANGI ROAD, SINGAPORE 419754</p> <p>MR ANUAR BIN ABDUL MAJID</p> <p>H/P : +65 81684401; +65 81684403</p> <p>EMAIL : anuar_adesc@adrealSAFE.com; aqilahma_rtc@adrealSAFE.com;</p>
14	<p>WONG FONG ACADEMY PTE LTD</p> <p>79 JOO KOON CIRCLE #03-03 SINGAPORE 629107</p> <p>MS LIYANA/MS RINA/ MS JANIFAR</p> <p>TEL : +65 68633686 H/P : +65 88213190</p> <p>EMAIL : sales@wfa.edu.sg</p>

S/N	NAME OF COMPANY
15	<p>EVERSAFE ACADEMY PTE LTD</p> <p>2 KAMPONG KAPOR ROAD SINGAPORE 208674</p> <p>MS APARNA/MS VANISHREE</p> <p>TEL : +65 62978417 (EXT 708) ; +65 62978417 (EXT 759)</p> <p>H/P : +65 94566715</p> <p>EMAIL : sales@eversafe.com.sg; diploma2@eversafe.com.sg;</p>
16	<p>SAAA CARGO SERVICES PTE LTD</p> <p>2 KALLANG AVENUE</p> <p>#08-03 CT HUB</p> <p>SINGAPORE 339407</p> <p>MS PAULINE TOK/ MS LINDA</p> <p>TEL : +65 65455006</p> <p>H/P : +65 98636863</p> <p>EMAIL : admin@saaa.org.sg; finance@saaa.org.sg</p>
17	<p>GREENSAFE INTERNATIONAL PTE LTD</p> <p>175A BENCOOLEN STREET</p> <p>#08-11, BURLINGTON SQUARE</p> <p>SINGAPORE 189650</p> <p>MR VICTOR JAMES EDWARD</p> <p>TEL : +65 62970388</p> <p>H/P : +65 90695122</p> <p>EMAIL : victor@greensafe.com.sg</p>

Transport Emergency Response Plan (TERP)

As part of our continued efforts to create a pro-enterprise environment, SCDF has reviewed the Transport Emergency Response Plan (TERP) online submission process. To simplify the online application process, the TERP shall be submitted as part of the Flammable Material Transportation Licence application with effect from 1st August 2017.

Please submit the TERP document together with other supporting documents through **GoBusiness**.

Following the implementation of this initiative, TERP applications (New and Renew) in the SCDF **e-Services** will be closed.

For any clarification on TERP, you may email to SCDF_FMI_FMT@scdf.gov.sg