

**I S I E C****INITIAL SAFETY INFORMATION ON EXPERIMENTS AT CERN**

DATE: 16.12.05 EXPERIMENT: COMPASS / PT  
 INSTALLATION START: 24.11.05 AREA/BEAM: EHN2 / M2 (888)  
 SPOKESMAN: A. MAGNON, G. MALLOT  
 GLIMOS: G. MALLOT TEL: 76423  
 FILLED IN BY: G. MALLOT, J. KOUVONIEMI TEL: 76423

(1) TEST BEAMS : \_\_\_\_\_  
 LABS AT CERN (BLDG/ROOM): \_\_\_\_\_

**(2) GASES, LIQUIDS, CRYOLIQUIDS**

(used in detectors or kept in nearby containers)

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. Press.	Max Flow
Sup. magnet	Liq. helium	600 L	1,1 bar	20 L/h
Dil. refig.	Liq. helium	12 L	0 bar	20 L/h

**(3) OTHER CHEMICALS**

Toxic/Corrosive/Flammable metals, solvents, additives etc:

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**(4) ELECTRICITY**

	Magnet type	Power	Field	Gap Vol.	Max. water press.
MAGNETS:	Sup. magnet	10 kW	2.5 T	0.33 m <sup>3</sup>	12 bar

	Detector Type	Voltage	Current	Stored Energy	No of HV Channels	Remote Shut-off?
High Voltage (> 1 KV)						

SHORT-CIRCUIT current &gt; 5 mA for &gt;50 V possible anywhere? \_\_\_\_\_

POWER dissipated by all electronics a) on detectors: \_\_\_\_\_

b) off detectors: \_\_\_\_\_

SPECIAL GROUNDING REQUIREMENTS? \_\_\_\_\_

**(5) LIFTING AND HANDLING**

Weight of heaviest single piece to install ? 7.5 t  
 Specially designed handling equipment? /  
 For which max. weight? /

**(6) VACUUM TANK, PRESSURE TANK, CRYO TANK**

Tank	Abs. pressure	Volume	Weakest part(s) of wall
mag. cryost.	0 bar	1 m <sup>3</sup>	3mm Al

**(7) IONIZING RADIATION**

Beam intensity, radioact. Sources, depleted uranium, etc.

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**(8) NON-IONIZING RADIATION**

	DETAILS ( e.g. class of laser, origin of UV light, average power of microwaves or RF, pulsed or CW, ...)
LASER	
UV LIGHT	
MICROWAVES (300 MHz-30 GHz)	70 GHz , 10 W
RADIOFREQUENCY (1-300 MHz)	

**(9) OTHER HAZARDS (or remarks):**

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**(10) RISK ANALYSIS**

cryo, electr. and magnetic risks discussed with SC

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# ISIEC

Date: 13.7.2000

Installation start: May 2000

Spokesman: F. Bradamante, S. Paul

GLIMOS:

Filled in by: R. Joosten

Experiment NA58 (COMPASS)

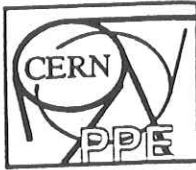
Area/beam: M2 Bat. 888

Tel.:

Tel.: 76796

GASES used in various detectors:

Detector	gas mixture	volume	abs. pressure	max flow	comment
MicroMegas	Ne(80%), <b>Ethane</b> (10%), CF <sub>4</sub> (10%)	12 l	1 atm	12 l/h	
Driftchambers	Ar(45 %), <b>Ethane</b> (45%), CF <sub>4</sub> (10%)	1000 l	1 atm	40 l/h	typ. flow !
MWPC-A	Ar(74%), CF <sub>4</sub> (20%), CO <sub>2</sub> (6%)	1050 l	1 atm	350 l/h	closed circuit
MWPC-A*	Ar(74%), CF <sub>4</sub> 20%), CO <sub>2</sub> (6%)	190 l	1 atm	50 l/h	closed circuit
MWPC-B	Ar(74%), CF <sub>4</sub> (20%), CO <sub>2</sub> (6%)	540 l	1 atm	300 l/h	closed circuit
GEMs	Ar(70%), CO <sub>2</sub> (30%)	14 l	1 atm	100 l/h	
RICH CsI	<b>CH<sub>4</sub></b>	320 l		800 l/h	baseline closed circuit
	<b>CH<sub>4</sub></b> (>80%), <b>Isobutane</b> (<20%)	320 l		800 l/h	option closed circuit
RICH radiator	C <sub>4</sub> F <sub>10</sub>	100000 l		10000 l/h	closed circuit
MW 1	Ar(70%), CO <sub>2</sub> (30%)	3000 l	1.01 atm	360 l/h	baseline
	CF <sub>4</sub> (90%), <b>Methane</b> (10%)	3000 l	1.01 atm	360 l/h	option closed circuit
MW 2	Ar(75%), <b>CH<sub>4</sub></b> (25%)	1800 l	1 atm	1000 l/h	
Straws	Ar(74%), CF <sub>4</sub> (20%), CO <sub>2</sub> (6%)	3000 l	?	<1000 l/h	closed circuit



# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 25.5.2000 EXPERIMENT: .....

INSTALLATION START: ..... AREA/BEAM: .....

SPOKESMAN: .....

GLIMOS: ..... TEL.: .....

FILLED IN BY: R Joosten TEL.: 76796

**1** TEST BEAMS: .....

LABS AT CERN (Bldg/room): .....

**2** GASES, LIQUIDS, CRYOLIQUIDS  
used in detectors (or kept in nearby containers):

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
MW 1	Ar (70%) (O <sub>2</sub> (30%) (baseline))	3000 l	1.01 atm	360 l/h
	Ar (70%) + Ethane (30%) (option)	3000 l	1.01 atm	360 l/h

**3** Other CHEMICALS  
toxic / corrosive / flammable metals, solvents, additives etc.:

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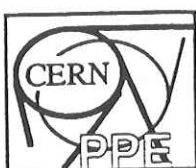
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# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 25/5/2000 EXPERIMENT: N758 (Com P755)  
 INSTALLATION START: \_\_\_\_\_ AREA/BEAM: M2 (Bat 888)  
 SPOKESMAN: \_\_\_\_\_ TEL: \_\_\_\_\_  
 GLIMOS: \_\_\_\_\_ TEL: \_\_\_\_\_  
 FILLED IN BY: R. Joosten TEL: 76796

**1** TEST BEAMS: \_\_\_\_\_  
 LABS AT CERN (Bldg/room): \_\_\_\_\_

**2** GASES, LIQUIDS, CRYOLIQUIDS  
 used in detectors (or kept in nearby containers):

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
RICH CsI	CH <sub>4</sub> (baseline)	8x40 l		800 l/hr
	780% CH <sub>4</sub> ; 20% Isobutane (optimal)	8x40 l		800 l/hr
RICH radiator	C <sub>4</sub> F <sub>10</sub>	100000 l		10000 l/hr

**3** Other CHEMICALS  
 toxic / corrosive / flammable metals, solvents, additives etc.:

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**4** ELECTRICITY:

MAGNETS:

Magnet type	Power	Field	Gap vol.	Max. water press.
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HIGH VOLTAGE (> 1 KV)

Detector Type	Voltage	Current	Stored energy	No of HV channels	Remote shut-off?
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SHORT-CIRCUIT currents > 5 mA for >50 V possible anywhere? -----  
 POWER dissipated by all electronics a) on detectors: -----  
 b) off detectors: -----  
 SPECIAL GROUNDING requirements? -----

**5** LIFTING AND HANDLING :

Weight of heaviest single piece to install? -----  
 Specially designed handling equipment? -----  
 For which max. weights? -----

**6** VACUUM AND PRESSURE tanks ( ≠ 1 atm.):

Tank	Abs. pressure	Volume	Weakest part(s) of wall
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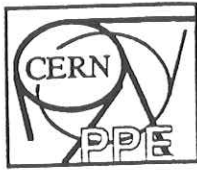
**7** RADIATION

Beam intensity, radioact. sources, depleted uranium, lasers, microwaves etc.:  
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**8** OTHER HAZARDS (or remarks):

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# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 16/05/2000 EXPERIMENT: NAS8 (Compass)  
 INSTALLATION START: 30/07/2000 AREA/BEAM: M2 (Bat 888)  
 SPOKESMAN: F. Bradamante S. Paul  
 GLIMOS: G. Mallot TEL: 76423  
 FILLED IN BY: O. DENISOV TEL: 75744

① TEST BEAMS: M2  
 LABS AT CERN (Bldg/room): Bat 891, 888

② GASES, LIQUIDS, CRYOLIQUIDS  
 used in detectors (or kept in nearby containers):

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
19WPC (typ A)	74% Ar + 20% CH <sub>4</sub> + 6% CO <sub>2</sub>	7 x 150	atmosph	50 l/h
19WPC (typ B)	= " =	6 x 90	atmosph.	50 l/h
19WPC A*	= " =	190	atm.	50 l/h

③ Other CHEMICALS  
 toxic / corrosive / flammable metals, solvents, additives etc.:

Isopropyl alcohol,  
 Ethyl alcohol





**4** ELECTRICITY:

MAGNETS:

Magnet type	Power	Field	Gap vol.	Max. water press.
<i>NO</i>				

HIGH VOLTAGE (> 1 KV)

Detector Type	Voltage	Current	Stored energy	No of HV channels	Remote shut-off?
<i>muon pc</i>	<i>4.5 kV</i>	<i>10 mA</i>	<i>—</i>	<i>20</i>	<i>Yes</i>

SHORT-CIRCUIT currents > 5 mA for >50 V possible anywhere? *Yes*

POWER dissipated by all electronics a) on detectors: *?*

b) off detectors: *?*

SPECIAL GROUNDING requirements? *Yes*

**5** LIFTING AND HANDLING :

Weight of heaviest single piece to install? *500 kg*

Specially designed handling equipment? *Yes*

For which max. weights? *500 kg*

**6** VACUUM AND PRESSURE tanks (≠ 1 atm.):

Tank	Abs. pressure	Volume	Weakest part(s) of wall
<i>NO</i>			

**7** RADIATION

Beam intensity, radioact. sources, depleted uranium, lasers, microwaves etc.:

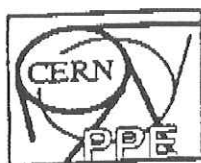
*Beam int upto  $2 \times 10^8$ ,  $52^{90}$  NaCl source*

*2.3 GBq*

**8** OTHER HAZARDS (or remarks):

*NO*

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# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 9/05/00 EXPERIMENT: NA 58  
 INSTALLATION START: May 25 AREA/BEAM: M2  
 SPOKESMAN: E. Sadocet, S. Paul  
 GLIMOS: \_\_\_\_\_ TEL: \_\_\_\_\_  
 FILLED IN BY: A. MAGNON TEL: \_\_\_\_\_

**1** TEST BEAMS: \_\_\_\_\_  
 LABS AT CERN (Bldg/room): \_\_\_\_\_

**2** GASES, LIQUIDS, CRYOLIQUIDS  
 used in detectors (or kept in nearby containers):

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
DRIFTS	Ar/Ethane/CF4 ~ 45/45/10	15 L	1 b	5 e/h
MICROMEGAS	Ar/Isobutane 90/10 Neon/Ethane/CF4 80/10/10	6 L	1 b	8 e/h

**3** Other CHEMICALS  
 toxic / corrosive / flammable metals, solvents, additives etc.:

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**4** ELECTRICITY:

MAGNETS:

Magnet type	Power	Field	Gap vol.	Max. water press.
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-----	-----	-----	-----	-----

HIGH VOLTAGE (> 1 KV)

Detector Type	Voltage	Current	Stored energy	No of HV channels	Remote shut-off?
D.RIFTS	3KV	600µA		7	
Picromegas	2KV	1A		2	
PMS	2KV	1A		2	

SHORT-CIRCUIT currents > 5 mA for >50 V possible anywhere? -----

POWER dissipated by all electronics a) on detectors: -----

b) off detectors: -----

SPECIAL GROUNDING requirements? -----

**5** LIFTING AND HANDLING :

Weight of heaviest single piece to install? -----

Specially designed handling equipment? -----

For which max. weights? -----

**6** VACUUM AND PRESSURE tanks (≠ 1 atm.):

Tank	Abs. pressure	Volume	Weakest part(s) of wall
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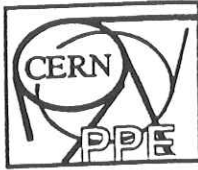
**7** RADIATION

Beam intensity, radioact. sources, depleted uranium, lasers, microwaves etc.:  
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**8** OTHER HAZARDS (or remarks):

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# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 5.5.2000 EXPERIMENT: COMPASS  
 INSTALLATION START: June AREA/BEAM: ESP 1M2  
 SPOKESMAN: F. Bradamante, S. Paul  
 GLIMOS: \_\_\_\_\_ TEL.: \_\_\_\_\_  
 FILLED IN BY: B. Ketzer TEL.: 76002

**1** TEST BEAMS: \_\_\_\_\_  
 LABS AT CERN (Bldg/room): \_\_\_\_\_

**2** GASES, LIQUIDS, CRYOLIQUIDS  
 used in detectors (or kept in nearby containers):

*full COMPASS setup  
 (20 detectors)*

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
GEM detectors	Ar / CO <sub>2</sub> (70%/30%)	14l	Atmosph. p.	100l/h
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**3** Other CHEMICALS  
 toxic / corrosive / flammable metals, solvents, additives etc.:

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**4** ELECTRICITY:

MAGNETS:

Magnet type	Power	Field	Gap vol.	Max. water press.
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-----	-----	-----	-----	-----

HIGH VOLTAGE (> 1 KV)

Detector Type	Voltage	Current	Stored energy	No of HV channels	Remote shut-off?
CEM detectors	4 kV	200 $\mu$ A	240 mJ	40	yes
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SHORT-CIRCUIT currents > 5 mA for >50 V possible anywhere? ----- no

POWER dissipated by all electronics

a) on detectors: ----- 360 W (20 detectors)

b) off detectors: ----- 120 W

SPECIAL GROUNDING requirements? ----- no

**5** LIFTING AND HANDLING :

Weight of heaviest single piece to install? -----

Specially designed handling equipment? -----

For which max. weights? -----

**6** VACUUM AND PRESSURE tanks ( $\neq$  1 atm.):

Tank	Abs. pressure	Volume	Weakest part(s) of wall
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**7** RADIATION

Beam intensity, radioact. sources, depleted uranium, lasers, microwaves etc.:

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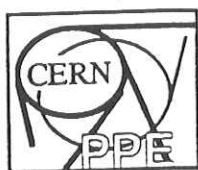
**8** OTHER HAZARDS (or remarks):

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# I S I E C

INITIAL SAFETY INFORMATION on EXPERIMENTS at CERN

DATE: 3.05.2000 EXPERIMENT: .....

INSTALLATION START: End of 2000 AREA/BEAM: .....

SPOKESMAN: .....

GLIMOS: ..... TEL: .....

FILLED IN BY: I. Khokhlov TEL: .....

**1** TEST BEAMS: .....

LABS AT CERN (Bldg/room): .....

**2** GASES, LIQUIDS, CRYOLIQUIDS  
used in detectors (or kept in nearby containers):

Device Type	Fluid 1 + % Fluid 2 etc.	Volume	Abs. press.	Max. flow
MW2 - drift tubes	75% Ar + 25% CH <sub>4</sub>	≈ 1800 l	1.6	1000 l
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.....	.....	.....	.....	.....

**3** Other CHEMICALS  
toxic / corrosive / flammable metals, solvents, additives etc.:

no

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**4** ELECTRICITY:

MAGNETS:

Magnet type	Power	Field	Gap vol.	Max. water press.
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HIGH VOLTAGE (> 1 KV)

Detector Type	Voltage	Current	Stored energy	No of HV channels	Remote shut-off?
<i>MW2 - Drift tubes</i>	<i>3 kV</i>	<i>1 mA</i>	<i>3 J</i>	<i>1800</i>	<i>Yes</i>
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SHORT-CIRCUIT currents > 5 mA for >50 V possible anywhere? -----  
 POWER dissipated by all electronics a) on detectors: ----- *~ 2 kW*  
 b) off detectors: -----  
 SPECIAL GROUNDING requirements? -----

**5** LIFTING AND HANDLING :

Weight of heaviest single piece to install? -----  
 Specially designed handling equipment? -----  
 For which max. weights? -----

**6** VACUUM AND PRESSURE tanks ( ≠ 1 atm.):

Tank	Abs. pressure	Volume	Weakest part(s) of wall
<i>Central gas supply</i>	-----	-----	-----
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**7** RADIATION

Beam intensity, radioact. sources, depleted uranium, lasers, microwaves etc.:  
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**8** OTHER HAZARDS (or remarks):

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*Yu. Khokhlov* *Kov.*