

### PERSONAL INFORMATION

Name Address Telefone E-mail Pec	CHIUSOLO CRISTINA
Nationality	
Date of birth	
PROFESSIONAL PROFILE KEY QUALIFICATION	<ul> <li>With over 15 years' experience in Risk Analysis, Process Safety and Design HSE activities for Basic, Front End Engineering Design and Detailed Engineering Design projects and proposals on Oil and Gas, Chemical, Petrochemical and Power plants. In particular, experience in Loss Prevention discipline, Risk Assessment studies, Fire and Explosion modelling, Active and Passive fire protection systems, Fire &amp; Gas Detection and Alarm systems, Safety Design reviews at home office, HAZOP analysis, SIL classification and Quantitative Risk Assessment.</li> <li>Project management experience as a Safety Engineer Leader, supporting procurement and construction activities located in several operating centres. Management of safety engineers team (5 professionals).</li> <li>Experience with consortium partners, suppliers and subcontractor's relations: follow-up of interfaces, subcontracting studies, follow-up of Vendor's equipment, Local Regulation Permits.</li> <li>Results oriented and able to work successfully under pressure, attention to detail and sense of urgency to complete projects, team worker.</li> </ul>
OTHER SKILLS	FUNCTIONAL SAFETY PROFESSIONAL in accordance with IEC 61511:2003 ID number: TP12050554 Field: Process Industry Subject: Safety Instrumented Systems

FIRE SAFETY ENGINEER (D.M. 5 agosto 2011 - ex 818/84)

License n. PV 02400100411

Technical Court Consultant - TCC at the Court of Pavia



#### CURRICULUM VITAE CHIUSOLO CRISTINA

Course on "Documentum" Software for storage and manage documents - 23 Sep 2015

"Project Managment Base" Politecnico di Milano - 11 and 12 May 2015

"HAZOP Chairman training", Det Norske Veritas (DNV) from 08 to 11 July 2014

COURSES Introduction to Project management – 2011 March

The Netherlands Organization TNO Industrial Safety; Training Course on EFFECTS 8 and RISKCURVES 7 – 2010 April

Lecturer on 'Risk Analysis Methodology' at sessions for training of plant workers - 2007, March

December 2017 - Teacher for A2A Energia Brescia head office on introduction to HAZOP analysis (1 day).

#### **TEACHING ACTIVITIES**

January 2018 - Teacher for A2A Energia Milan head office on introduction to HAZOP analysis (1 day)

January 2018 - Teacher for A2A Energia Brescia head office on HAZOP analysis methodologies - Advanced (1 day).

March 2018 - Teacher for A2 Engineering Brembate (BG) head office on HAZOP analysis methodologies – Base and Advanced (2 day).

June 2018 - Teacher for COREP (MASIEO) Turin head office on introduction to HAZOP analysis (1 day)

September 2018 - Teacher for COREP (MASIEO) Turin head office on Firefighting system design (1 day)

May 2019 - Teacher for ENI University Corporate Milan head office on HAZOP technique basic course (3 days)

September 2019 - Teacher for ENI University Corporate Milan head office on HAZOP technique basic course (3 days)

October 2019 - Teacher for ENI University Corporate Milan head office on HAZOP technique advanced course (5days).

October 2019 - Teacher for COREP (MASIEO) Turin head office on Firefighting system design (1 day)



#### CURRICULUM VITAE CHIUSOLO CRISTINA

October 2020 - Teacher for ENI University Corporate Maputo office Mozambico (sessions in<br/>distance) on HAZOP technique basic course (3 days)TEACHING ACTIVITIESNovember 2020 - Teacher for ENI University Corporate Milan head office (sessions in distance)<br/>on HAZOP technique basic course (3 days)

December 2020 - Teacher for COREP Turin head office on Firefighting system design (1 day)



	April 2016 – present	Freelance Engineer
PROFESSIONAL RESUME	2011 - 2016	TECHINT Engineering&Construction
PROFESSIONAL RESUME	2007 - 2011	MAIRE TECNIMONT S.p.A.
	2003 - 2007	TRR S.r.l.

#### FREELANCE ENGINEER

2020 January, 2021 January	PHA/HAZOP LEADER 2021 March, HAZOP for NALCO Damanjodi Calcination Plant, 5 days, Outotec GmbH & Co. KG (Germany)
	2021 – from January to March – HAZOP Team Leader for Reactor 1, 2 and 3, 10 days, Elantas Europe Quattordio (AL) and Ascoli Piceno (AP)
	2020, PHA Team Leader for Methane Plant – Utilities plant, 1 day, Arkema, Rho (Milano).
	2020, HAZOP Team Leader for PLA production (biodegradable plastic), 2 days, Biovalore Group EarthBi, Termoli (CB)
	2020 -2021, HAZOP Team Leader for various design changes in Refinery, 5 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi
	2020, PHA Team Leader for 35 Plant – MAM plant production, 16 days, Arkema, Rho (Milano).
	2020, PHA Team Leader for 33 Plant - European Mass 1, 7 days, Arkema, Rho (Milano).
	2020, PHA Team Leader for 03M Acrylate storage tanks, 4 days, Arkema, Rho (Milano).
	2020; PHA Team Leader for ASO Acids storage tanks, 3 days, Arkema, Rho (Milano)
	2020; PHA Team Leader for Acetone Cyanohydrin storage tanks, 2 days, Arkema, Rho (Milano)
	2020; PHA Team Leader for Incineration plant, 3 days, Arkema, Rho (Milano)
	2020; PHA Team Leader for 33 Plant, 4 days, Arkema, Rho (Milano)
	2020, HAZOP Team Leader for various design changes in Refinery, 5 days, Eni Spa Refining & Marketing, Taranto
	2020, HAZOP Team Leader for new VRU plant of Tempa Rossa unloading petroleum, 3 days, Eni Spa Refining & Marketing, Taranto.
	2020, HAZOP Team Leader for various design changes in Refinery, 5 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).



2020 April, 2020 May	FIRE&GAS DETECTION AND ALARM SYSTEM DESIGN AND ENGINERING
	2020, Fire & Gas Mapping Report and Fire &Gas Layout of Reactor Building 2 for Imerys Graphite & Carbon, Willebroek Belgium.
2019 January, 2019 December	PHA/HAZOP LEADER
,	2019, PHA Team Leader for design change in SF2 plant, 3 days, LyondellBasell, Ferrara.
	2019, HAZOP Team Leader for various design changes in Refinery, 11 days, Eni Spa Refining & Marketing, Taranto.
	2019, HAZOP Team Leader for various design changes in Refinery, 4 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, PHA Team Leader for Alkylation plant of Refinery, 6 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Review Team Leader for Desulphurization GAS 1 plant of Refinery, 1 day, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Benzene 1% plant, 3 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for IGAS plant ( <b>analysis after explosion</b> <b>accident</b> ), 3 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for GPL 1 Storage, 1 day, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Hydro-Desulphurization 1 plant, 2 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Zolfo 2 plant, 3 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Zolfo 4 plant, 5 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Rose Deasphalting plant, 5 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Hazardous substances storage tanks, 3 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for loading/unloading platform of hazardous substances for /to ATB and FC, 3 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).
	2019, HAZOP Team Leader for Oil pipeline station, 2 days, Eni Spa Refining & Marketing, Sannazzaro de' Burgondi (Pavia).



Country

Italy

#### CURRICULUM VITAE CHIUSOLO CRISTINA

2018 April, 2018 November	PHA LEADER
Projects	SF2 plant, Production of catalyst. LYB Ferrara site is the world's largest site for Ziegler- Natta catalyst development and production and is fully integrated with basic research, process and product development (9 week of PHA as leader)
Clients	LYONDELL BASELL S.p.A.
Country	Italy – Ferrara (FE)
Job Description	PHA Leader to develop a semi-quantitative risk analysis according to client Guidelines (LYB Process Risk Management Standard and Process Risk Management Preferred Practice)
2018 July	HAZOP LEADER
Projects	Biogas Sulphur removal system, Biogas Upgrading Unit, Biomethane Drying system
Clients	HERA S.p.A.
Country	Italy – Bologna (BO)
Job Description	HazOp Leader to develop Safety analysis
2017 December, 2018 January	HAZOP LEADER
Projects	Production of detergents, laundry additives, surface and floor cleaners
Clients	BOLTON MANITOBA S.p.A.
Country	Italy – Nova Milanese (MB)
Job Description	HazOp Leader to develop Safety report according to D. Lgs. 105/2015
2017 December, 2018 January	HAZOP LEADER
Projects	Production of high-performance polyurethanes for Coating, Flexible Packaging, Industrial Adhesives, Prepolymers, Inks plant
Clients	SAPICI S.p.A.
Country	Italy – San Cipriano Po (PV)
Job Description	HazOp Leader to develop Safety report according to D. Lgs. 105/2015
2017 November	HAZID / HAZOP /SIL LEADER
Projects	Poseidon pipeline project – FEED WP5 Compression and metering stations, Otranto fiscal metering station
Clients	Edison EDF Group

Job Description Hazid / HazOp / SIL Leader to develop Safety reports and related analysis



2017 June		HAZOP LEADER
	Projects	Introduction for new leather chemicals reaction in existent batch reactor.
	Clients	STHAL
	Country	Italy – Paderno Dugnano (MI)
	Job Description	HazOp Leader to develop preliminary engineering analysis

2017 May	HAZOP LEADER
Projects	TAF plant, revamping TAF Deco plant
Clients	ENI Syndial
Country	Italy – Assemini (CA)
Job Description	HazOp Leader to develop Safety report

2016 November – 2017 March	HAZOP LEADER
Projects	TAF plants, revamping of some parts of different TAF plants
Clients	ENI Syndial
Country	Italy – Assemini (CA), Priolo (SR), Brindisi (BR), Manfredonia (FG)
Job Description	HazOp Leader to develop Safety report

2016 December	HAZOP LEADER
Projects	Production of aerosols for cosmetic, pharmaceutical, medical and surgical devices plant
Clients	Aerosol Service Italiana s.r.l.
Country	Italy – Valmadrera (LC)
Job Description	HazOp Leader to develop Safety report according to D. Lgs. 105/2015

2016 November	HAZOP LEADER
Projects	Formaldehyde plant and Methanol storage tanks
Clients	Hexion Italia s.r.l.
Country	Italy – Solbiate Olona (VA)
Job Description	HazOp Leader to develop a semi-quantitative risk analysis according to client Risk Matrix



#### CURRICULUM VITAE CHIUSOLO CRISTINA

	Projects	Producer and recycle of Lead plant
	Clients	Ecobat S.p.A.
	Country	Italy – Pademo Dugnano (MI)
	Job Description	HazOp Leader to develop Safety report according to D. Lgs. 105/2015
2016 Ap	ril	HAZOP LEADER
201074	Projects	Introduction of new pharmaceutical receipe
	Clients	Farchemia s.r.l.
	Country	Italy – Treviglio (BG)
	Job Description	HazOp Leader to verify "Non Aggravio di Rischio" according to D.Lgs. 105/2015
2016 Ap	ril	HAZOP LEADER
	Projects	TAF plant, revamping of plant, substitution of sand filters
	Clients	ENI Syndial
	Country	Italy – Avenza (MS)
	Job Description	HazOp Leader to develop Safety report
		HAZOP LEADER
2016 Ap	ril, May Projects	Resoli e Novolacche plants
	Clients	Hexion Italia s.r.l.
	Country	Italy – Solbiate Olona (VA)
	Job Description	HazOp Leader to develop a semi-quantitative risk analysis according to client Risk Matrix
2016 Ap	ril —	RISK ANALYST
	Projects	Various Projects for different Clients:
	Job Description	Preparation of Safety Report for granting Permits from National/Local Authorities (HSE Committees, Fire Brigades, Local Health and Environmental Officers, etc.). Risk Analysis, Quantitative Risk Assessment, Safety technical Studies; in particular Safety Report according to D. Lgs. 105/2015 and DPCM 31/03/1989 that follow the "Seveso" /Directive 92/82/CE regarding the major industrial hazards.



#### **TECHINT E&C**

2015 September – 2016 March	SENIOR EHE LEADER
Project	Power project – Phase II – Converting existing simple cycle to combined cycle plant – EPC Phase
Client	East Delta Electricity Production Company (EDEPC) -
Location - Country	West Damietta - Egypt
Job Description	Senior HSE engineer coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagram dimensioning for bid phase
2015 August – 2016 March	SENIOR EHE LEADER
Project	Power project – Phase II – Converting existing simple cycle to combined cycle plant – EPC Phase
Client	East Delta Electricity Production Company (EDEPC) -
Location - Country	Al Shabab - Egypt
Job Description	Senior HSE engineer coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagram dimensioning for bid phase
2015 February – July 2015	SENIOR EHE LEADER
Project	Supercritical Thermal Power Plant Units 1, 2 & 3 - 3x650 MW Gas/Oil Fired Units – CP 118 BOP – Bid Phase
Client	Upper Delta Electricity Production Company (EDEPC) - Power Generation Service Company (PGESCo)
Location - Country	South Helwan - Egypt
Job Description	Senior HSE engineer coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagram dimensioning for bid phase.
2014 June – 2015 July	SENIOR EHE LEADER
Project	C4-Isomerization unit debottlenecking replacement of current i-c4 feedstock with the equivalent amount of mixed butane (m-c4)feedstock – Detailed design engineering
Client	Lyondell Chemie Nederland B.V.
Location - Country	Botlek – Netherlands
Job Description	Senior HSE leader coordinating design activities of firefighting and fire protection systems and HAZOP and SIL studies, PSSR at Site
2014 December – 2015 February	SENIOR EHE LEADER
Project	Power project – Phase II – Converting existing simple cycle to combined cycle plant – Bid Phase
Client	East Delta Electricity Production Company (EDEPC) -
Location - Country	West Damietta - Egypt
Job Description	Senior HSE engineer coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagram dimensioning for bid phase



2014 April – 2014 June	SENIOR EHE LEADER
Project	El Amerya – New Gas Turbine Simple Cycle Power Plant – Early works
Client	Egyptian Petrochemicals Co.
Location - Country	Alexandria - Egypt
Job Description	Senior HSE leader coordinating preliminary design activities of firefighting and fire protection systems and Fire & Gas detection and alarm system
2012 December – 2013 February	SENIOR EHE LEADER
Project	DUNKERQUE LNG TERMINAL TRANSHIPMENT PROJECT – Bid Phase
Client	Dunkerque LNG – Groupe EDF
Location - Country	Dunkerque - France
Job Description	Senior HSE leader coordinating preliminary design activities of firefighting and fire protection systems and Fire & Gas detection and alarm system
2012 August – 2012 October	SENIOR EHE LEADER
Project	SEDKO 430 MW gas fired combined cycle gas turbine Power Plant – Bid Phase
Client	Urundul Enerji Yatırımları A.S Corsortium with Ansaldo Energia
Location - Country	Kirklareli - Turkey
Job Description	Senior HSE leader coordinating preliminary design activities of firefighting and fire protection systems and Fire & Gas detection and alarm system
2011 September – 2012 Mach	SENIOR EHE LEADER
Project	3,600 MTPD Methanol Plant Project - Early Works Phase
Client	Eleme Petrochemicals Company Limited (EPCL)
Location - Country	Port Harcourt - Nigeria
Job Description	Senior HSE leader coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagrams (P&IDs) dimensioning, and preliminary Fire & Gas detection and alarm system. Coordination of the HAZOP & SIL Studies.
2011 August – 2012 December	SENIOR EHE LEADER
Project	Supercritical Thermal Power Plant Units 1 & 2 - 2x650 MW Gas/Oil Fired Units – CP 118 BOP – EPC Phase
Client	East Delta Electricity Production Company (EDEPC) - Power Generation Service Company (PGESCo)
Location - Country	El Ain El Sokhna - Egypt
Job Description	Senior HSE engineer coordinating design activities of firefighting and fire protection systems, fire piping and instrumentation diagram dimensioning, hydraulic calculation of fire water systems, Fire & Gas detection and alarm system.



MAIRE TECNIMONT S.p.A.

	MAILE LEGIMONT S.P.A.
2010 August – 2011 July	HSE DESIGN LEADER – LDPE FOCAL POINT
Project	Polyolefins Plants, Low Density Polyethylene Plant
Client	Abu Dhabi Polymers Company Limited Borouge
Location - Country	Ruwais - United Arab Emirates (UAE)
Job Description	Execution of EPC (Engineering, Procurement and Construction) Activities. Design and Engineer coordination of the following activities: - Firefighting and fire protection systems - Hydraulic firewater calculation network - Fire&Gas Detection and Alarm System - Passive fire protection - Fire water spay system P&IDs (distributive) - Explosion studies Coordination of the HAZOP & SIL Studies and follow-up. Project HSE Design Review at Home Office.
2010 May – 2010 August	HSE DESIGN LEADER
Project	Butene 1 Plant and ETBE Plant Revamping, Selective hydrogenation plant and buried tanks
Client	POLIMERI EUROPA
Location - Country	Ravenna - ITALY
Job Description	Execution of EPC (Engineering, Procurement and Construction) Activities. Coordination of the HAZOP, SIL and LOPA Studies and follow-up
2010 August – 2011 July	HSE DESIGN LEADER
Project	Polyolefins Plants, Low Density Polyethylene Plant and Utilities and Offsite Plant
Client	Abu Dhabi Polymers Company Limited Borouge
Location - Country	Ruwais - United Arab Emirates (UAE)
Job Description	<ul> <li>Execution of FEED (Front End Engineering and Design) Activities.</li> <li>Design and Engineer coordination of the following activities:</li> <li>Firefighting and fire protection Systems</li> <li>Hydraulic firewater calculation network</li> <li>Fire&amp;Gas Detection and Alarm System</li> <li>Passive fire protection</li> <li>Coordination of the HAZOP &amp; SIL Studies and follow-up.</li> <li>Project HSE Design Review at Home Office</li> </ul>
2008, 6- 10 October	HSE DESIGN LEADER
Project	Spherilene Plant
Client	Lyondell BASELL
Location - Country	Nizhnekamsk - RUSSIA
Job Description	Experience of Pre Start-up Safety Review (PSSR) to verify with Basell if the plant had been built in accordance with LyondellBasell HSE Design Criteria, as training.



2008 February – 2009 October		HSE DESIGN LEADER
200016	Project	Polypropylene Plant Spherizone, LyondellBasell Technology, 300 KT/Y
	Client	DRCC
	Location - Country	Daqing - PRC
	Job Description	Execution of Basic Engineering activities. Leader Engineer coordination of the following activities: - Firefighting and fire protection Systems - Fire & Gas Detection and Alarm System - Passive Fire Protection. Coordination of the HAZOP & SIL Studies and follow-up.
2008 Ja	nuary – 2009 February	HSE DESIGN LEADER
	Project	Polypropylene Plant Spherizone, LyondellBasell Technology, 300 KT/Y
	Client	REPSOL POLIMEROS LDA
	Location - Country	Sines - Portugal
	Job Description	Execution of Detailed Engineering activities. Leader Engineer coordination of the following activities: - Firefighting and fire protection Systems - Fire Piping and Instrumentation Diagrams dimensioning - Hydraulic firewater calculation network - Fire&Gas Detection and Alarm System - Passive Fire Protection Coordination of the HAZOP & SIL Studies and follow-up. Project HSE Reviews at home office and on field.
2007 Oc	ctober – 2007 December	HSE DESIGN ENGINEER
	Project	Polypropylene Plant Spherizone, LyondellBasell Technology, 300 KT/Y
	Client	REPSOL POLIMEROS LDA
	Location - Country	Sines - Portugal
	Job Description	Execution of Basic Engineering activities. Leader Engineer coordination of the following activities: - Firefighting and fire protection Systems - Fire&Gas Detection and Alarm System - Passive Fire Protection.



#### TRR S.r.I.

2003 September – 2007 October	RISK ANALYST
Project Client	Various Projects for different Clients: Polimeri Europa (Eni), Air Liquide, Enipower, Basell, Chemgas, Agip, Esso
Location - Country	Italy
Job Description	Preparation of Safety Report for granting Permits from National/Local Authorities (HSE Committees, Fire Brigades, Local Health and Environmental Officers, etc.). Execution of HAZOP Chairman and Secretary, Risk Analysis, Quantitative Risk Assessment, Safety technical Studies. In particular: - Safety Report according to D. Lgs. 334/99 and DPCM 31/03/1989 that follow the
Job Description	"Seveso" Directive 92/82/CE regarding the major industrial hazards. - Activities on Occupational Safety and Health according to D Lgs. 626/94 and DM
	10/03/1998.
	<ul> <li>Technical documentation according to DM 04/05/1998 to request fire prevention certificate.</li> </ul>
	- Safety Tecnichal Study according to ISPESL Circular n. 9/04.
	Fondazione Cusani Visconti Onlus
2006 Jauary – 2006 March	SAFETY HYGIENE CONSULTANT
Client	Fondazione Cusani Visconti Onlus
Location - Country	Pavia - Italy
Job Description	Occupational Safety and Health Report according to D Lgs. 626/94 and DM 10/03/1998



# EDUCATION AND TRAINING

• From - To	September 1996 – April 2003
<ul> <li>University</li> </ul>	Politecnico, Milano
Skills acquired	Knowledge of Chemical engineering and chemistry applied to industrial processes and plants (such as chemical, oil&gas and petrochemical plants)
<ul> <li>Degree obtained</li> </ul>	Degree in Chemical Engineering specializing in industrial chemistry
<ul> <li>Final grades</li> </ul>	94/100
Other skills	Engineering license
	Registered in Professional Association on Engineers – Pavia (Italy) n. 2400 sez. A

## PERSONAL SKILLS

Mother tongue	ITALIAN
LANGUAGE SKILLS	
<ul> <li>Reading</li> <li>Writing</li> <li>Speaking</li> </ul>	English Good Good Fluent
COMUNICATION SKILLS	GOOD COMUNICATION SKILLS GAINED THROUGH MY EXPERIENCE AS HSE LEADER
ORGANIZATIONAL / MANAGERIAL SKILLS	GOOD TEAM LEADING SKILLS GAINED TO MANAGEMENT OF SAFETY ENGINEERS TEAM (CURRENTLY RESPONSIBLE FOR A TEAM OF $3$ PEOPLE).
COMPUTER SKILLS	<ul> <li>Good command of the following software package:</li> <li>MS OFFICE, AUTOCAD14 e 2012; Microstation, Internet Explorer</li> <li>software for hazard analysis and scenarios evaluation, such as EFFECT, PHAST.</li> </ul>
DRIVING LICENCE	"B" category