

QUALIFICATION FILE – Micro Credentials

< FUNDAMENTALS OF OCCUPATIONAL RISK MANAGEMENT IN THE CHEMICAL INDUSTRY >

☐ Public ☒ Private

☒ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☒ Multi-skill (MS) ☒ Cross Sectoral (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 4

Submitted By:

< SAFETY SKILL DEVELOPMENT FOUNDATION >

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Section 1: Basic Details

1.	Micro Credential-Qualification Name	FUNDAMENTALS OF OCCUPATIONAL RISK MANAGEMENT IN THE CHEMICAL INDUSTRY														
2.	Sector/s	Education, Training & Research; Hydrocarbon, Iron & steel, Mining, Power, Automotive, Construction, Chemicals & Petrochemicals and others.														
3.	National Qualification Register (NQR) Code & Version <i>(Will be issued after NSQC approval.)</i>	NM-04-ET-04309-2025-V1-SSDF	4. NCrF/NSQF Level: 4													
5.	Brief Description of the Micro Credential	The Micro credential offers expertise in comprehending the fundamentals of chemical safety, encompassing the ability to recognize hazardous chemicals present at a particular location, evaluate the potential risks associated with their usage, estimate the likelihood of a chemical incident, assess the potential consequences of a hazardous event, select appropriate control measures for each identified hazard, employ the Hierarchy of Controls when dealing with chemical hazards, and ensure ongoing compliance with chemical regulations through regular reviews.														
6.	Eligibility Criteria for Entry for Students/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience <table><tr><th>S. No.</th><th>Academic/Skill Qualification (with specialization- if applicable)</th><th>Relevant Experience (with specialization- if applicable)</th></tr><tr><td>1</td><td>12th grade pass or equivalent</td><td>-</td></tr><tr><td>2</td><td>10th grade pass or equivalent</td><td>3</td></tr><tr><td>3</td><td>Previous relevant qualification of NSQF level 3</td><td>3</td></tr></table> b. Age:NA			S. No.	Academic/Skill Qualification (with specialization- if applicable)	Relevant Experience (with specialization- if applicable)	1	12th grade pass or equivalent	-	2	10th grade pass or equivalent	3	3	Previous relevant qualification of NSQF level 3	3
S. No.	Academic/Skill Qualification (with specialization- if applicable)	Relevant Experience (with specialization- if applicable)														
1	12th grade pass or equivalent	-														
2	10th grade pass or equivalent	3														
3	Previous relevant qualification of NSQF level 3	3														
7.	Credits Assigned to this Qualification, Subject to Assessment <i>(as per National Credit Framework (NCrF))</i>	0.5		8. Common Cost Norm Category (I/II/III) <i>(wherever applicable): I</i>												
9.	Any Licensing Requirements/ Pre-requisites for Undertaking Training <i>(wherever applicable)</i>	NA														
10.	Expected Outcomes of the Micro Credential	Terminal learning outcomes are:														

		● Determine the presence of dangerous substances within your work environment. ● Evaluate the potential risks associated with the identified chemicals. ● Decide on how to effectively manage and control the identified risks. ● Introduce physical modifications to the workplace that will effectively minimize or eliminate the risk of chemical exposure. ● Apply the Hierarchy of Controls approach when addressing chemical hazards. ● Maintain continuous compliance with chemical regulations by conducting regular reviews.												
11.	Training Duration by Modes of Training Delivery <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	☒ Offline Only ☐ Online Only ☐ Blended <table><tr><th>Training Delivery Mode</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>Total (Hours)</th></tr><tr><td>Classroom (offline)</td><td>8</td><td>7</td><td>15</td></tr><tr><td>Online</td><td>-</td><td>-</td><td>-</td></tr></table> <i>(Refer Blended Learning Annexure for Details)</i>	Training Delivery Mode	Theory (Hours)	Practical (Hours)	Total (Hours)	Classroom (offline)	8	7	15	Online	-	-	-
Training Delivery Mode	Theory (Hours)	Practical (Hours)	Total (Hours)											
Classroom (offline)	8	7	15											
Online	-	-	-											
12.	Assessment Criteria	<table><tr><th>Theory (Marks)</th><th>Practical (Marks)</th><th>Project (Marks)</th><th>Viva (Marks)</th><th>Total (Marks)</th><th>Passing %age</th></tr><tr><td>46</td><td>54</td><td>-</td><td>-</td><td>100</td><td>50</td></tr></table>	Theory (Marks)	Practical (Marks)	Project (Marks)	Viva (Marks)	Total (Marks)	Passing %age	46	54	-	-	100	50
Theory (Marks)	Practical (Marks)	Project (Marks)	Viva (Marks)	Total (Marks)	Passing %age									
46	54	-	-	100	50									
13.	Is the Qualification Amenable to Persons with Disability	☒ Yes ☐ No If “Yes,” <i>specify applicable type of Disability:</i>												
14.	How participation of women will be encouraged?	Women will be encouraged to join												
15.	Other Indian Languages in which the Micro Credential will be implemented.	English and Hindi												

16.	Is similar Micro Credential Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:	
17.	Name and Contact Details Submitting / Awarding Body SPOC	Name: Anand Kumar Singh Email: aksingh@ssdfindia.org Contact No.: +91-8505955506 Website: www.ssdfindia.org	
18.	NSQC Approval Date: 08-05-2025	19. Validity Duration: 3 Years	20. Next Review Date: 08-05-2028

Section 2: Training Related

1.	Trainer's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	M. Tech/ B. Tech with 4 years' experience. Graduate in any discipline / Diploma in Engineering with 7 years' experience.
2.	Master Trainer's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	M. Tech/ B. Tech with 5 years' experience. Graduate in any discipline / Diploma in Engineering with 8 years' experience.
3.	Tools and Equipment Required for Training	☒ Yes ☐ No <i>(If "Yes," details to be provided in Annexure)</i>

Section 3: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	M. Tech/ B. Tech with 4 years' experience. Graduate in any discipline / Diploma in Engineering with 7 years' experience.
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	M. Tech/ B. Tech with 3 years' experience. Graduate in any discipline / Diploma in Engineering with 6 years' experience.

3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	M. Tech/ B. Tech with 5 years' experience. Graduate in any discipline / Diploma in Engineering with 8 years' experience.
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Mode: ☒ Online Only ☐ Offline Only ☒ Blended
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☒ Yes ☐ No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

Section 4: Evidence of Need of the Micro Credential

As per the NCVET Guidelines for evidence of need, provide the required Annexure/Supporting documents.

1.	Government /Industry initiatives/ requirement (Yes/No): No
2.	Number of Industry validation provided: 5
3.	Estimated number of people to be trained: 30,000

Section 5: Annexure Check List

Specify Annexure Number and Name.

1.	Annexure: NCrf/NSQF level justification based on NCrf Level/NSQF descriptors <i>(Mandatory)</i>	Yes
2.	Annexure: Learning Outcomes and Assessment Criteria <i>(Mandatory)</i>	Yes
3.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Yes

4.	Annexure: List of tools and equipment relevant for qualification (<i>Mandatory – Except in case of online course</i>)	Yes
5.	Annexure: Blended Learning (<i>Mandatory in case selected mode of delivery is “Blended Learning”</i>)	No
6.	Annexure: Acronym and Glossary (<i>Optional</i>)	Yes

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	- Understanding different types of chemical hazards (physical, chemical, biological), sources of hazards, and their potential impacts. - Understanding the adverse effects of chemicals on health, dose-response relationships, exposure routes, and toxicokinetics - Familiarity with national and international regulations, standards, and guidelines (e.g., OSHA, REACH, GHS). - Principles of safe handling, storage, and disposal of chemicals, including Material Safety Data Sheets (MSDS) and labeling. - Understanding occupational health risks and industrial hygiene principles to control exposures. - Planning for emergency situations involving chemical releases, spills, and exposures.	Factual and Practical Knowledge: At NSQF Level 4, professionals are expected to have factual and theoretical knowledge in broad contexts. This includes understanding regulatory frameworks, chemical properties, risk assessment techniques, and safety management principles. Cognitive and Practical Skills: They are required to demonstrate a range of cognitive and practical skills necessary to generate solutions to specific problems. This involves conducting risk assessments, implementing safety measures, and responding to emergencies. Responsibility: Individuals at this level take responsibility for their own work and learning and may also have some responsibility for others. This is evident in roles such as safety officers, who	4.0

	Understanding the principles of process safety, including hazard analysis, risk control measures, and process safety performance indicators.	ensure compliance, conduct training, and lead emergency response efforts.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	- Proficiency in using tools like HAZOP, FMEA, and risk matrices - Keeping up-to-date with regulatory changes and ensuring organizational compliance. - Implementing safety management systems, including MSDS, labeling, and spill response protocols. - Interpreting toxicological data to assess risks. - Conducting process safety audits and hazard analyses. - Developing and executing emergency response plans and conducting drills. - Conducting exposure assessments and implementing control measures.	Factual and Practical Knowledge: Professionals at this level must have a solid understanding of the factual and theoretical aspects of chemical safety, risk assessment, regulatory compliance, and emergency preparedness. Cognitive and Practical Skills: They must demonstrate the ability to apply cognitive and practical skills to solve specific problems related to chemical hazards, implement safety measures, and respond to emergencies. Responsibility: Individuals are expected to work independently, taking responsibility for their own tasks and contributing to the safety of others. They must also be able to guide and supervise junior staff, ensuring compliance with safety standards and regulations.	4.0

Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• In-depth understanding of chemical safety, hazard identification, risk assessment, and regulatory compliance. • Ability to analyze complex safety issues, develop practical solutions, and implement corrective actions. • Clear and effective communication of safety protocols, risk assessments, and emergency procedures to diverse audiences.\ • Developing new safety solutions, improving existing processes, and implementing cutting-edge technologies. • Identifying potential risks and developing strategies to mitigate them effectively.	• Knowledge and Skills: Professionals at NSQF Level 4 must have a good grasp of theoretical knowledge and practical skills in their field, which includes the technical aspects of risk management, regulatory compliance, and safety practices. • Responsibility: Individuals are expected to take responsibility for their own work, demonstrate leadership in safety initiatives, and potentially oversee the work of others. • Problem-Solving: The ability to generate solutions to specific problems and to adapt to changing circumstances is crucial, aligning with the cognitive and practical skill requirements of Level 4.	4.0
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Broad Learning Outcomes/Core Skill	● Demonstrate a comprehensive understanding of various chemical hazards, including physical, chemical, and biological risks. ● Conduct thorough risk assessments to identify potential hazards and implement appropriate risk management strategies. ● Ensure compliance with national and international safety regulations and standards. ● Implement safe handling, storage, and disposal procedures for chemicals. ● Develop and implement effective emergency response plans for chemical incidents. ● Protect worker health by controlling exposures to hazardous chemicals. ● Ensure the safety of chemical processes through rigorous process safety management.	● Knowledge and Understanding: Professionals at this level must have factual and theoretical knowledge in broad contexts, such as chemical hazards, risk assessment methodologies, regulatory compliance, and emergency response. ● Cognitive and Practical Skills: They are expected to apply cognitive and practical skills to solve specific problems related to chemical safety, manage risks, and ensure regulatory compliance. ● Responsibility: Individuals at NSQF Level 4 take responsibility for their own work and may have some responsibility for others, which includes leading safety initiatives, conducting training, and overseeing compliance.	4.0
Responsibility	● Conducting comprehensive hazard identification and risk assessments to determine potential risks associated with chemical processes and substances. ● Ensuring that all operations comply with national and international safety regulations and standards. ● Developing and enforcing safety protocols and procedures to minimize chemical hazards. ● Developing and maintaining emergency response plans for chemical incidents.	● Factual and Theoretical Knowledge: Professionals must have a solid understanding of the principles and practices related to chemical safety, risk assessment, regulatory compliance, and emergency response. ● Cognitive and Practical Skills: They need to apply their knowledge and skills to identify hazards, assess risks, implement	4.0

	- Protecting worker health by controlling exposures to hazardous chemicals and ensuring safe working conditions. - Ensuring the safety and integrity of chemical processes through effective process safety management. - Minimizing the environmental impact of chemical processes and ensuring compliance with environmental regulations.	safety measures, and respond to emergencies effectively. Responsibility for Own Work and Others: Individuals at this level take responsibility for their own tasks and often oversee the work of others, ensuring compliance with safety standards and regulations.	
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Annexure: Learning Outcomes and Assessment Criteria

Detailed learning outcomes and assessment criteria for the qualification are as follows:

S. No.	Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
1.	PC-1 Identify chemical hazards, carryout risk assessments including those associated with new chemicals or processes.	6	6	-	-
2.	PC-2 Apply effective application of engineering controls, administrative controls, and personal protective equipment (PPE).	5	6	-	-
3.	PC-3 Carryout regular evaluation of the effectiveness of risk control measures and prompt adjustments as needed and continuous improvement in risk management practices.	5	6	-	-
4.	PC-4: Develop emergency response plans and procedures and carryout regular testing of emergency response plans and procedures.	5	6	-	-

5.	PC-5 Comply with local, national, and international safety regulations and standards (e.g., OSHA, EPA, REACH) and carryout regular internal and external audits to ensure ongoing compliance with regulations.	5	6	-	-
6.	PC-6 Maintain accurate record-keeping and carryout timely reporting of incidents and compliance status and monitoring & analysis of safety performance indicators, such as incident rates, lost-time injuries, and near-misses.	5	6	-	-
7.	PC-7 Carryout regular training for employees on safety procedures, emergency response, and proper handling of chemicals.	5	6	-	-
8.	PC-8 Ensure regular health checks for employees exposed to hazardous chemicals.	5	6	-	-
9.	PC-9 Promote a strong safety culture within the organization, emphasizing the importance of risk management and prioritize occupational risk management efforts.	5	6	-	-
Total Marks		46	54	-	-

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

<1. Assessment System Overview:

- Batches are assigned to the assessment agencies for conducting the assessment on SIP/Portal or email.
- Assessment agencies send the assessment confirmation to VTP/TC looping Awarding Body(AB)
- Assessment agency deploys the ToA certified Assessor for executing the assessment.
- AB ensures the assessment process & records.

2. Testing Environment:

- Check the assessment location, date, and time.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the AA/Subject Matter Experts (SME) are verified by the other SME.
- Questions are mapped to the specified assessment criteria.
- Assessor will be ToA certified & trainer will be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location.
- Method for assessment documentation, archiving, and access
- Soft/Hard copies of the documents are stored.

On the Job:

1. The candidate works for all modules.
2. The candidate must score 50% in assessment to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills, understanding needs & requirements.
 - Report prepared by trainees during OJT.
4. Assessment of task ensure that the candidate can perform all tasks of the job role required:

Annexure: Tools and Equipment

List of Tools and Equipment

Batch Size: 30

No	Tools/Equipment Name	Specifications	Quantity for specified Batch size
•	Personal Protective Equipment (PPE)	Nos	5
•	Chemical Storage Cabinet	Nos	1
•	Spill kits	Nos	1

•	Absorbent materials	Nos	2
•	Containment pallets	Nos	2
•	Safety cans for flammables	Nos	2
•	Chemical storage containers	Nos	2
•	Gas Detector	Nos	2
•	Chemical Sensors	Nos	2
•	Radiation Detectors	Nos	2
•	Air Quality Monitors	Nos	2
•	Emergency Showers and Eyewash Stations	Nos	1
•	Fire Extinguishers	Nos	1
•	First Aid Kits	Nos	1
•	Emergency Response Kits	Nos	1
•	Chemical Handling Tools	Nos	5
•	Safety Data Sheets (SDS)	Nos	1
•	Chemical Safety Manuals and Guides	Nos	1

Classroom Aids:

The aids required to conduct sessions in the classroom are:

1. Black/White board

2. Marker
3. Projector
4. Computer with relevant software

Annexure: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1.	Shapoorji Pallonji and Co. Pvt Ltd	Mr. Nitin Bansal	Manager QAQC	SP Centre, 41/44, Minoo Desai Marg, Colaba, Mumbai - 400005 Maharashtra, India Tel: +91-22-67490000	8130090463	nitin.bansal@shapoorji.com	-
2.	Tata Advanced Systems	Asheesh Singhal	Deputy Manager	Plot no.C-01, 401, 4th Floor, World Trade Tower Sector sixteen, Noida Uttar Pradesh-201301 India Tel +91 120 4847450-7555 I Fax 91 11 43602735	7290014317	apkumar@tataadvancedsystems.com	-
3.	SIMPLEX Infrastructures Limited	Tarak Bhaumik	General Manager (HR&Admin)	Simplex House 27, Shakespeare Sarani, Kolkata-700 017 Tel: (91 33) 23011600	-	-	-

				Fax: (91 33) 2283 5966 / 65			
4.	TECHNOCULTURE Building Center Pvt Ltd	Anurag Tiwari	Manager	Konark Shree Apartment, RBI Road, 301/302, Brajkishore Path, Ali Nagar Colony, Salimpur Ahra, Dujra Diara, Patna, Bihar 800001	9006506858	vastu.skills@gmail.com	-
5.	Urja Building Services Consultants Pvt Ltd	Sheetal Bhilkar	Managing Director	648,649, Laxmi Plaza, Laxmi Industrial Estate, Suresh Nagar, Andheri West, Mumbai, Maharashtra 400053	9819819212	sheetalbhilkar@urjagroup.in	-

Annexure: Training Details

Training Projections:

Year	Estimated Training # Total Candidates		Estimated Training # of Women		Estimated Training # People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024	800	800	120	120	250	250
2025	1400	1400	200	200	450	450
2026	1400	1400	200	100	450	450

Data to be provided year-wise for the next 3 years.

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities based on their main economic function, product, service, or technology.