



FMEA ANALYSIS: NEW HIRE AT SAMSUNG CMP – TECHNICIAN 2

Risk Priority Number (RPN) = Severity (S) × Occurrence (O) × Detection (D)

No.	Process Step	Potential Failure Mode	Potential Effect(s)	S	O	D	RPN	Recommended Action (Training Focus)
1	 Training & Onboarding	Inadequate understanding of CMP process	Incorrect operation, process deviation	8	6	6	288	Comprehensive CMP fundamentals training
2	 Safety Compliance	Not following EHS rules	Personal injury, tool damage, production stop	10	4	5	200	Mandatory EHS training, regular drills
3	 Tool Operation	Incorrect tool start-up/shutdown sequence	Equipment damage, downtime	9	5	6	270	Hands-on training, simulation, SOP review
4	 Process Setup	Wrong recipe or parameter input	Wafer defects, yield loss	9	5	5	225	Recipe management training, double-check protocol
5	 Consumables Handling	Improper handling or installation	Contamination, poor polish performance	8	5	6	240	Hands-on training, visual guides, supervision
6	 Chemical Handling	Incorrect chemical usage or mixing	Safety hazard, wafer damage	9	4	5	180	Chemical handling training, labeling, verification
7	 Wafer Loading/Unloading	Mishandling wafers	Wafer breakage, contamination	8	5	6	240	Proper handling training, practice with dummies
8	 Monitoring & Control	Failure to detect abnormal conditions	Defects, tool damage, yield loss	9	6	6	324	Alarm response training, monitoring best practices
9	 Preventive Maintenance (PM)	Incomplete or incorrect PM	Unexpected downtime, reduced tool life	8	5	5	200	PM training, checklists, mentor validation
10	 Troubleshooting	Incorrect troubleshooting step	Longer downtime, equipment damage	8	5	6	240	Troubleshooting guides, scenario-based training
11	 Data Logging & Documentation	Inaccurate or incomplete records	Loss of traceability, compliance issues	7	6	6	252	Documentation training, digital tools, audit review
12	 Communication	Failure to report issues promptly	Escalated problems, prolonged downtime	8	5	6	240	Communication training, clear escalation path
13	 Cleanliness & Contamination Control	Poor gowning or workspace hygiene	Contamination, wafer defects	9	5	6	270	Cleanroom protocol training, regular audits
14	 Change Management	Not following MOC (Management of Change)	Process upset, quality issues	8	4	6	192	MOC training, awareness sessions
15	 Continuous Learning	Lack of initiative to learn	Repeated errors, slow competency development	7	6	7	294	Learning plan, mentorship, regular assessments

RPN RISK LEVEL GUIDE

≥ 300	High Risk Immediate action required
200 – 299	Medium Risk Action required
100 – 199	Lower Risk Monitor and improve
< 100	Low Risk Maintain control

KEY INSIGHTS


Top Risk Areas
Monitoring & Control
(RPN 324)


Focus Training
Tool Operation,
Cleanliness,
Onboarding,
Continuous
Learning


Use Real
Scenarios
Simulate failures
in training


Validate
Competency
Assess and
certify
before
independent work


Continuous
Improvement
Update training
based on incidents
and feedback

TRAINING MODEL FRAMEWORK



CMP SYSTEM OVERVIEW (CONTEXT)



SUCCESS OUTCOMES

- Reduced incidents and downtime
- Higher yield and better product quality
- Confident and competent Technician 2
- Stronger safety culture
- Continuous learning and development
- Long-term contribution to Samsung's vision

OUR VISION TOGETHER


People + Process + Excellence
Building World-Class CMP Technicians
for a Smarter, Brighter Future.

SAMSUNG | Together for a Better Tomorrow

