

# REACH-Exposure Scenario

## Downstream use of PM Production



Template  
Revision: 5

Issue: April 2009

European Powder  
Metallurgy Association

End application made at your site: Metal Injection Moulding		<b>3b</b>	<b>MIM : Thermal Debinding</b>			Raw Material: See list of Substances for MIM-Feedstocks REACH Status: Downstream use of substances			
Process Step		Workplace Exposure Route of exposure to humans				Environmental Exposure Emission to environment			
N°	Description See Table 2	Inhalation	Oral	Dermal	RMM in use See Table 1	Air	Water	Soil	RMM in use See Table 1
1	Thermal Debinding (incl. cooling)	yes			LEV	yes*			LEV
2	Cleaning and Maintenance Thermal debinding	yes		yes	LEV GPum	yes*			LEV

### Operational Conditions (OC)

**Quality and Quantity of material used:** See List of Substance Pressing and Sintering

**Physical form (e.g. particle, gaseous media):** liquid media

**Annual operating days (days/year):** 260

**Number of working hours per day (hours/day):** 8 hrs/day

**Number of shifts per day:** 1

**Number of employees involved in the process steps (see above):** 1 workers for thermal debinding and maintenance.

**Frequency and duration (e.g. numbers of workers exposed and the time they are exposed and also how frequently are they exposed):** exposed time and frequency cannot be quantified:

### 1 Table of Risk Management Measures (RMM) in use

Type of Risk Management Measures - <u>Environment</u>	RMM in use (Codes) (Delete whichever does not apply)	Efficiency (if possible, provide a quantitative figure)
To Air:		
Other:		
To Water:		
Other:		
To Soil:		
Other:		
To control general diffuse site emissions:		
Storage coverage	SC	unr
Other:		
Type of Risk Management Measures - <u>Workers</u> ***	RMM in use (Codes) (Delete whichever does not apply)	Efficiency (if possible, provide a quantitative figure)
Local Exhaust Ventilation (LEV)	LEV	LEVunr
Cleaning of site	C	Removal of waste Efficiency cannot be quantified
• Respiratory protection equipment (RPE): Pattern of use (mandatory, voluntary, not required?)	Pattern of use mandatory: RPEum Pattern of use voluntary: RPEuv Pattern of use not required: RPEunr	RPEunr
• Face piece (e.g. quarter mask)	FP	FPunr

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• Protection class (particles)	PC	PCunr
• Gloves (G): Pattern or use (mandatory, voluntary, not required?)	Pattern of use mandatory: GPum Pattern of use voluntary: GPuv Pattern of use not required: GPunr	GPunr
• Type of glove (description)		Cotton gloves for warm parts (max 100°C) water Maintenance: Standard work gloves
• Other (please specify):		

### Comment:

\* Environmental impact is assessed during normal production; emergencies are not put in consideration. Environmental Exposures are defined as environmental impact to the environment outside the plant.

\*\* Frequent measure of exhaust quality by external party

### 2 Table of Process Steps Full Descriptions

Process Step		Full Description
N°	Description	
1	Thermal Debinding (incl. cooling)	Introduce partially debound parts in protective atmosphere furnace onto stainless steel racks, heat up in protective atmosphere in slow cycles (up to 3 days) to about 300°C to decompose most backbone binder. Wait for cooling, extract parts, inspect and weigh to check for level of debinding.
2	Cleaning and Maintenance Thermal Debinding	Cleaning the debinding furnace, removal of waste (broken parts), disposal of condensed binder (wax, polymer)

### 3 Glossary

Term	English	French	German
RPE	Respiratory Protective Equipment	Équipement protecteur respiratoire (EPR)	Atenschutzsaurüstung
PPE	Personal Protective Equipment	Équipement protecteur personnel (EPP)	persönliche Schutzsaurüstung
LEV	Local Exhaust Ventilation	Ventilation externe locale (VEL)	Absauganlage
RMM	Risk Management Method	Méthode de management du risque (MMR)	Risikomanagementmaßnahme
um	use mandatory	Utilisation obligatoire	Pflichtanwendung
uv	use voluntary	Utilisation volontaire	Freiwillige Anwendung
unr	use not required	Utilisation non requise	Anwendung nicht erforderlich
QM	quarter mask		
C	cleaning	Nettoyage	Reinigung

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