

# 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>3a</b>	<b>MIM : Water 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	Water Debinding (incl. drying)			yes	SC	yes*	yes	Yes*	SC MAV
2	Cleaning and Maintenance Water debinding			yes	C GPuv	no	yes	yes	MAV

### 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 water 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:		
Maximum Admissible Level for Water Disposal	MAV	Binder dissolved should not exceed the maximum limit for regulation, this may be accomplished by changing water frequently, using closed distillation systems or diluting disposed water. Controls on metal ions dissolved as well.**
Other:		
To Soil:		
Other:		Avoid accidental spillage.
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 spillages

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		Efficiency cannot be quantified
• Respiratory protection equipment (RPE): Pattern of use (mandatory, voluntary, not required?)	Pattern of use mandatory: RPE <sub>um</sub> Pattern of use voluntary: RPE <sub>uv</sub> Pattern of use not required: RPE <sub>unr</sub>	RPE <sub>unr</sub>
• Face piece (e.g. quarter mask)	FP	FP <sub>unr</sub>
• Protection class (particles)	PC	PC <sub>unr</sub>
• Gloves (G): Pattern of use (mandatory, voluntary, not required?)	Pattern of use mandatory: GP <sub>um</sub> Pattern of use voluntary: GP <sub>uv</sub> Pattern of use not required: GP <sub>unr</sub>	GP <sub>unr</sub>
• Type of glove (description)		Latex/plastic gloves for warm water Maintenance: Standard work gloves
• Other (please specify):		

### Comment:

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

\*\* Frequent measure of water disposal quality by external party

## 2 Table of Process Steps Full Descriptions

Process Step		
N°	Description	Full Description
1	Water Debinding (incl. drying)	Immersing green parts (set onto trays in stainless steel racks) into warm water baths (30-70°C) for prolonged time (6-48 hrs) to dissolve part of the binder. Extract racks, and dry them in a drawer with warm recirculated air (40-70°C). Inspect and weigh sample parts to check debinding level.
2	Cleaning and Maintenance Water Debinding	Cleaning the debinding tanks, removal of waste (broken parts), disposal of exhaust water with dissolved binder.

## 3 Glossary

Term	English	French	German
RPE	Respiratory Protective Equipment	Équipement protecteur respiratoire (EPR)	Atenschutzsaurüstung
PPE	Personal Protective Equipment	Équipement protecteur personnel (EPP)	persönliche Schutzausrüstung
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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