

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **032017-004**

Project Number: 2016-09-029
Installation Number: 047-0199

Parent Company: Henkel Corporation North Kansas City

Parent Company Address: One Henkel Way, Rocky Hill, CT 06067

Installation Name: Henkel Corporation North Kansas City

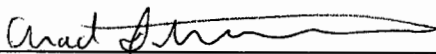
Installation Address: 1350 Taney Street, North Kansas City, MO 64116

Location Information: Clay County, T50N, R33W

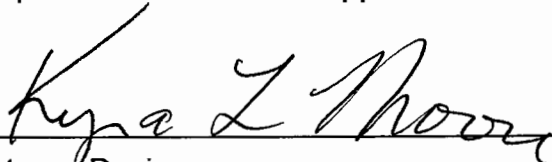
Application for Authority to Construct was made for:
Batch mixing of raw materials to produce adhesives. This permit is part of a remedial action required by the Air Pollution Control Program for recent upgrades the facility has made. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Prepared by
Chad Stephenson
New Source Review Unit



Director or Designee
Department of Natural Resources

MAR 08 2017

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Henkel Corporation North Kansas City
Clay County, T50N, R33W

1. Control Device Requirement-Rotoclone Wet Dust Collector
 - A. Henkel Corporation North Kansas City shall control emissions from EP-2, EP-3, EP-4, EP-5, EP-6, EP-7 and EP-8 using a Rotoclone Dust Collector as specified in the permit application. A list and description of emission points are provided in Table 1
 - B. The Rotoclone Dust Collector shall be operated and maintained in accordance with the manufacturer's specifications. The Rotoclone Dust Collector shall be equipped with a pressure switch. The pressure switch shall be located such that Department of Natural Resources' employees may easily observe it. The pressure switch shall be adjusted to automatically stop the Rotoclone motor when water supply fails or water pressure falls below 28 pounds per square inch.
 - C. Henkel Corporation North Kansas City shall maintain an operating and maintenance log for the Rotoclone Dust Collector which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
2. Record Keeping and Reporting Requirements
 - A. Henkel Corporation North Kansas City shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
 - B. Henkel Corporation North Kansas City shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2016-09-029

Installation ID Number: 047-0199

Permit Number: **032017-004**

Installation Address:

Henkel Corporation North Kansas City
1350 Taney Street
North Kansas City, MO 64116

Parent Company:

Henkel Corporation North Kansas City
One Henkel Way
Rocky Hill, CT 06067

Clay County, T50N, R33W

REVIEW SUMMARY

- Henkel Corporation North Kansas City has applied for authority to construct tanks for batch mixing of raw materials to produce adhesives.
- The application was deemed complete on October 24, 2016.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are 1,3-Dichloropropene (CAS 542-75-6) and Vinyl Acetate (CAS 108-05-4). HAP emissions are also expected from the natural gas combustion. All HAPs are emitted in amounts less than their respective SMAL.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Rotoclone wet dust collector is being used to control the PM, PM₁₀, and PM_{2.5} emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are conditioned below de minimis levels.
- This installation is located in Clay County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The Henkel North Kansas City facility produces water-based liquid adhesives under the Aquence brand for envelope, tissue and towel markets. The facility uses seven process tanks to batch mix raw materials to produce the adhesives. Raw materials are in solid and liquid form and are received in bags, supersacks, drums, totes, or by tanker truck and rail car delivery to bulk tanks. Raw materials are loaded into process tanks through piping from bulk storage tanks, dedicated pumps from totes and drums, piping from the bag dump station, and by manual dumping or pouring through process tank hatches. Raw materials are blended in the closed process tanks according to product formulations and then pumped to final product containers using dedicated pumps directly from process tanks. A list of the facility emission points are listed below in Table 1.

Table 1: Installation Emission Points

Emission Unit	Description	Control Device	Maximum Design Capacity
EP-01	Natural Gas Combustion Sources consisting of a 8.37 MMBtu/hr boiler, 0.038 MMBtu/hr hot water heater, 1.00 MMBtu/hr combined spaced heaters, and 0.730 MMBtu/hr combined power washers	N/A	10.138 MMBtu/hr combined for all sources
EP-02	Process Tank 7 – Adhesive Products	Rotoclone Wet Dust Collector	5,107,080 lbs/year*
EP-03	Process Tank 15 – Adhesive Products	Rotoclone Wet Dust Collector	10,950,00 lbs/year*
EP-04	Process Tank 20 – Adhesive Products	Rotoclone Wet Dust Collector	14,602,920 lbs/year*
EP-05	Process Tank 45 – Adhesive Products	Rotoclone Wet Dust Collector	21,900,000 lbs/year*
EP-06	Process Tank 65 – Adhesive Products	Rotoclone Wet Dust Collector	35,502,920 lbs/year*
EP-07a	Process Tank 90 – Adhesive Products Powder Addition	Rotoclone Wet Dust Collector	43,800,000 lbs/year*
EP-07b	Process Tank 90 –	N/A	43,800,000 lbs/year*

	Adhesive Products SuperSack Addition Transfer and Conveying		
EP-08	Process Tank 91 – Adhesive Products	Rotoclone Wet Dust Collector	43,800,000 lbs/year*
EP-09 Bulk Tank EU-5	Resyn 1072	N/A	4,599,000 gal/year**
EP-09 Bulk Tank EU-6	Vinnapas 400 H	N/A	4,599,000 gal/year**
EP-09 Bulk Tank EU-7A	K-Flex 1	N/A	1,460,000 gal/year**
EP-09 Bulk Tank EU-7B	K-Flex 2	N/A	1,460,000 gal/year**
EP-09 Bulk Tank EU-8	Polyethylene Glycol 600	N/A	1,460,000 gal/year**

N/A = Not applicable

*Based on maximum design capacity

**Calculated by tank capacity multiplied by maximum of 1 turnover per day and 365 days

No permits have been issued to Henkel Corporation North Kansas City from the Air Pollution Control Program. The facility is an existing facility that recently reviewed its potential to emit and actual emissions for calendar year 2015. During that review it was indicated unconditioned potential emissions from the facility were above de minimis levels.

EMISSIONS/CONTROLS EVALUATION

The facility utilizes over 2,000 raw materials in various combinations to produce over 200 sealant/adhesive products through its seven process tanks. For the purpose of estimating potential emissions, emissions were calculated for a selection of the most common product(s) through each tanks and the product with the worst case emissions is utilized for estimating the potential to emit. Information regarding product formulation ratios were provided by the applicant along with the safety data sheets

The emission factors for the combustion of natural gas (EP-01) were obtained from the Environmental Protection Agency (EPA) document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 1.4, Natural Gas Combustion (07/98).

Powder is added in EP-02 (process tank 7), EP-04 (process tank 20), EP-05 (process tank 45), EP-07a (process tank 90), and EP-08 (process tank 91). The throughput of powder was determined by using the product formulation ratios and multiplying the maximum throughput of the tank by the percent of powder in the product formulation. The emission factors for PM₁₀ for adding powder to the process tanks was obtained from WebFire (Factor Information Retrieval System), EPA's online emission factor repository, for the Source Classification Codes (SCC) 3-01-020-05. This emission factor is for the addition of pigment in ink manufacturing. No emission factors were available for the addition of powder in adhesive manufacturing, so this emission factor was used. PM₁₀ was assumed to be equal to PM and PM_{2.5}. Based on manufacturer specifications a 98% control efficiency was assigned for PM and PM₁₀ for the use of the Rotoclone wet dust collector for all process tank particulate matter emissions except EP-7b, process tank 90 product transfer and conveying. The manufacturer did not provide control efficiency data specific to PM_{2.5} so 90% control efficiency was assigned for PM_{2.5}.

The powder for EP-7b (process tank 90) is unloaded from SuperSacks with no control into the supersack unloader/bag dump equipment. The bulk bag handling unit gravity feeds into a rotary valve and blower pushes it into the tank at a subsurface level. The bulk bag handling unit is currently connected to process tank 90 and 45, but can only be used for one process tank at a time so transfer and conveying emissions were evaluated for the larger process tank 90. Process tanks 15 and 65 have the ability to process products using only liquid ingredients as well as products that use powder raw materials. For the purpose of evaluating emissions the worst case product calculations included only liquid ingredients for VOC and both liquid and powder raw materials for PM, PM₁₀, and PM_{2.5}. Process tanks 15 and 65 are connected to the Rotoclone wet dust collector.

The VOC emission factors used in the analysis of the working and breathing loss of the tanks were obtained using the safety data sheets and TANKS Emissions Estimation Software, Version.4.09D. The HAP emission factors were obtained using the safety data sheets and equations from the Environmental Protection Agency (EPA) document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 7.1, Liquid Storage Tanks (11/06). Tank Characteristics for the process tanks and bulk tanks are given below in Table 3 and Table 4. Throughput of the bulk storage tanks is limited by throughput of the process tanks; maximum throughput is conservatively estimated at one turn-over per day per tank. All tanks were assumed to be horizontal and unheated for the purpose of evaluating the potential emissions.

Table 2: Process Tank Characteristics

Emission Unit	Size (gal)	Height (ft.)	Diameter (ft)
EP-02 Process Tank 7	350	4.50	4.25
EP-03 Process Tank 15	750	5.33	5.42
EP-04 Process Tank 20	1,000	5.00	6.58
EP-05 Process Tank 45	3,400	8.00	8.50
EP-06 Process Tank 65	2,700	8.50	8.00
EP-07 Process Tank 90	3,820	9.00	8.50
EP-08 Process Tank 91	3,820	9.00	8.50

Table 3: Bulk Storage Tank Characteristics

Emission Unit	Size (gal)	Height (ft.)	Diameter (ft)	Process Tank Utilizing Bulk Tank
EP-09 Bulk Tank EU-5 Resyn 1072	12,600	20.00	10.50	EP-04 Tank 20, EP-05 Tank 45 and EP-07 Tank 90
EP-09 Bulk Tank EU-6 Vinnapas 400 H	12,600	20.00	10.50	EP-03 Tank 15, EP-04 Tank 20 and EP-06 Tank 65
EP-09 Bulk Tank EU-7A K-Flex 1	4,000	10.50	8.00	EP-03 Tank 15, EP-04 Tank 20 and EP-06 Tank 65
EP-09 Bulk Tank EU-7B K-Flex 2	4,000	10.50	8.00	EP-03 Tank 15, EP-04 Tank 20 and EP-06 Tank 65

EP-09 Bulk Tank EU-8 Polyethylene Glycol 600	4,000	10.50	8.00	EP-04 Tank 20 and EP-08 Tank 91
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The following table provides an emissions summary for this project. There are no existing potential or actual emissions since this facility has not been previously permitted. Potential emissions of the application represent the uncontrolled potential of the equipment, assuming continuous operation (8760 hours per year). The conditioned potential emissions account for the use of a Rotoclone wet dust collector to control the particulate matter emissions.

Table 4: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Installation	New Installation Conditioned Potential
PM	25.0	N/D	N/D	24.80	8.83
PM ₁₀	15.0	N/D	N/D	24.80	8.83
PM _{2.5}	10.0	N/D	N/D	19.01	4.34
SO _x	40.0	N/D	N/D	0.03	0.03
NO _x	40.0	N/D	N/D	4.38	4.38
VOC	40.0	N/D	N/D	9.41	9.41
CO	100.0	N/D	N/D	3.68	3.68
Combined HAPs	25.0	N/D	N/D	0.50	0.50
Vinyl Acetate	1.0	N/D	N/D	0.42	0.42
1,3 - Dichloropropene	1.0	N/D	N/D	0.01	0.01

N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Henkel Corporation North Kansas City shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

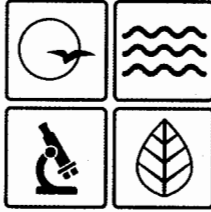
The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 16, 2016, received September 22, 2016, designating Henkel Corporation North Kansas City as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR.....	maximum hourly design rate
BMPs	Best Management Practices	MMBtu ...	Million British thermal units
Btu.....	British thermal unit	MMCF.....	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ..	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO _x	nitrogen oxides
CO	carbon monoxide	NSPS.....	New Source Performance Standards
CO ₂	carbon dioxide	NSR.....	New Source Review
CO _{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM _{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM ₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm.....	parts per million
EIQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU.....	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC.....	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP.....	State Implementation Plan
gr.....	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO _x	sulfur oxides
HAP	Hazardous Air Pollutant	SO ₂	sulfur dioxide
hr	hour	tph.....	tons per hour
hp	horsepower	tpy.....	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC.....	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m ³	micrograms per cubic meter		



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

MAR 08 2017

Mr. Joe Guadagnano
Plant Manager
Henkel Corporation North Kansas City
1350 Taney Street
North Kansas City, MO 64116

RE: New Source Review Permit - Project Number: 2016-09-029

Dear Mr. Guadagnano:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

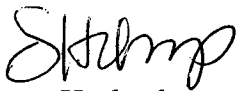


Mr. Joe Guadagnano
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Chad Stephenson, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp
New Source Review Unit Chief

SH:csj

Enclosures

c: Kansas City Regional Office
PAMS File: 2016-09-029

Permit Number: **032017-004**