Table 1: Emission lines used in this work and extinction coefficients from the THEMIS dust model (Jones et al., 2017).

Line	λ (Å)	$k(\lambda)$
[OII]	3727,3729	5.252
Hβ	4861	3.886
[OIII]	4959	3.797
[OIII]	5007	3.755
[NII][1]	6548	2.728
Hα	6563	2.720
[NII]	6584	2.710
[SII]	6717	2.644
[SII]	6731	2.637

[1] [NII]λ6548 is not actually fitted but its flux is set to 1/3 of the [NII]λ6584 flux.

Table 2: Columns for DP_lines_regions.csv.

Column	Unit	Description
nID		Identifier number for each region
name		Galaxy name
catID		Identifier within the catalogue used
RA	deg	Right ascension (J2000)
DEC	deg	Declination (J2000)
C(Hβ)		Balmer decrement
F_xx		Integrated flux for line xx, divided by Hβ (or by Hα if Hβ is not available)
E_xx		Uncertainty on F_xx
spec_ref		Reference for the emission line flux

Emission lines for DustPedia

We have performed a literature search to compile the emission line fluxes for as many of the DustPedia galaxies as possible. DP_lines_regions.csv lists the star forming regions for which it was possible to derive a metallicity. We do not claim this compilation is exhaustive, yet it does include results from many sources. A list of the compiled references is given in Table 3. The emission lines used in this work are given in Table 1. The emission lines of galaxies are attenuated both by internal and external dust. To account for this, the emission line intensities are corrected, first for Galactic extinction and then using the Balmer decrement given by:

$$C(\mathrm{H}\beta) = \frac{\log\left(\frac{\mathrm{H}\alpha}{\mathrm{H}\beta}\right)_{\mathrm{theor}} - \log\left(\frac{\mathrm{H}\alpha}{\mathrm{H}\beta}\right)_{\mathrm{obs}}}{0.4 \times [(\mathrm{k}(\lambda_{\mathrm{H}\alpha}) - \mathrm{k}(\lambda_{\mathrm{H}\beta})]} \quad (1)$$

where $k(\lambda)$ is the reddening curve using the THEMIS (Jones et al., 2017) dust model, $0.4 \times [(k(\lambda_{H\alpha}) - k(\lambda_{H\beta})] = -0.466$; $\log(\mathrm{H}\alpha/\mathrm{H}\beta)_{\mathrm{obs}}$ is the observed ratio between Hα and Hβ, and $\log(\mathrm{H}\alpha/\mathrm{H}\beta)_{\mathrm{theor}}$ the theoretically expected ratio (Hα/Hβ = 2.86; Osterbrock, 1989). The MUSE spectra have been extracted using the same 6″ pixels as the *Herschel* 250μm maps. We have corrected the astrometry and masked stars and sky emission lines. The MUSE spectra have been fitted by GandALF (Sarzi et al., 2006) to extract the emission line fluxes. Poor fits and regions with an equivalent width of Hα smaller than 6 were discarded. See Section 2 in De Vis et al. (2019) for more details.

Table 3: References used in the emission line flux compilation for DustPedia galaxies.

Metal sample ID	Reference
2df[e]	Colless et al. (2001)
6df[e]	Jones et al. (2009)
Anni10	Annibali et al. (2010)
Bres99[d]	Bresolin et al. (1999)
Bres02	Bresolin & Kennicutt (2002)
Bres05	Bresolin et al. (2005)
Bres09	Bresolin et al. (2009)
Bres12	Bresolin et al. (2012)
CALIFA[c]	Sánchez et al. (2012a; 2016)
CHAOS	Berg et al. (2015); Croxall et al. (2015; 2016)
Crox09	Croxall et al. (2009)
DGS	De Vis et al. (2017)
Disney77	Disney & Pottasch (1977)
DV17	De Vis et al. (2017)
GAMA	Liske et al. (2015)
Gavazzi04[a]	Gavazzi et al. (2004)
Gavazzi13[b]	Gavazzi et al. (2013)
Gon95	Gonzalez-Delgado et al. (1995)
Gus11	Guseva et al. (2011)
Ho95[b]	Ho et al. (1995)
HRS[a]	Boselli et al. (2013)
Jansen00I[a]	Jansen et al. (2000)
Jansen00N[b]	Jansen et al. (2000)
Kim95	Kim et al. (1995)
Kniazev2004	Kniazev et al. (2004)
Lee03	Lee et al. (2003)
Lira07	Lira et al. (2007)
MUSE[c]	This work
Moust06I[a]	Moustakas & Kennicutt (2006)
Moust06N[b]	Moustakas & Kennicutt (2006)
Moust10circ	Moustakas et al. (2010)
Moust10nuc[b]	Moustakas et al. (2010)
Moust10rad	Moustakas et al. (2010)
Pilyu14[d]	Pilyugin et al. (2014)
Rodr14[c]	Rodríguez-Baras et al. (2014)
Ros11[c]	Rosales-Ortega et al. (2011)
SAMI[c]	Green et al. (2018)
SDSS	Alam et al. (2015)
Sanchez12[c]	Sánchez et al. (2012b)
UZW[e]	Falco et al. (1999)
vanZee97	van Zee et al. (1997)
vanZee98	van Zee et al. (1998)
vanZee06	van Zee & Haynes (2006)

[a] These references provide integrated spectroscopy.
[b] These references provide nuclear spectroscopy.
[c] These references provide IFU spectroscopy.
[d] We were not able to make the reddening correction consistent with THEMIS since these references did not provide $C(\mathrm{H}\beta)$.
[e] These spectra were not properly flux calibrated. Only calibrations using lines that are very close in wavelength (i.e. N2 and O3N2) can be used reliably.

References

Alam, S., Albareti, F. D., Allende Prieto, C., et al. 2015, ApJS, 219, 12

Annibali, F., Bressan, A., Rampazzo, R., et al. 2010, A&A, 519, A40

Berg, D. A., Skillman, E. D., Croxall, K. V., et al. 2015, ApJ, 806, 16

Boselli, A., Hughes, T. M., Cortese, L., Gavazzi, G., & Buat, V. 2013, A&A, 550, A114

Bresolin, F., Kennicutt, R. C., & Ryan-Weber, E. 2012, ApJ, 750, 122

Bresolin, F. & Kennicutt, Jr., R. C. 2002, ApJ, 572, 838

Bresolin, F., Kennicutt, Jr., R. C., & Garnett, D. R. 1999, ApJ, 510, 104

Bresolin, F., Ryan-Weber, E., Kennicutt, R. C., & Goddard, Q. 2009, ApJ, 695, 580

Bresolin, F., Schaerer, D., González Delgado, R. M., & Stasińska, G. 2005, A&A, 441, 981

Colless, M., Dalton, G., Maddox, S., et al. 2001, MNRAS, 328, 1039

Croxall, K. V., Pogge, R. W., Berg, D. A., Skillman, E. D., & Moustakas, J. 2015, ApJ, 808, 42

Croxall, K. V., Pogge, R. W., Berg, D. A., Skillman, E. D., & Moustakas, J. 2016, ApJ, 830, 4

Croxall, K. V., van Zee, L., Lee, H., et al. 2009, ApJ, 705, 723

De Vis, P., Gomez, H. L., Schofield, S. P., et al. 2017, MNRAS, 471, 1743

Disney, M. J. & Pottasch, S. R. 1977, A&A, 60, 43

Falco, E. E., Kurtz, M. J., Geller, M. J., et al. 1999, PASP, 111, 438

Gavazzi, G., Consolandi, G., Dotti, M., et al. 2013, A&A, 558, A68

Gavazzi, G., Zaccardo, A., Sanvito, G., Boselli, A., & Bonfanti, C. 2004, A&A, 417, 499

Gonzalez-Delgado, R. M., Perez, E., Diaz, A. I., et al. 1995, ApJ, 439, 604

Green, A. W., Croom, S. M., Scott, N., et al. 2018, MNRAS, 475, 716

Guseva, N. G., Izotov, Y. I., Stasińska, G., et al. 2011, A&A, 529, A149

Ho, L. C., Filippenko, A. V., & Sargent, W. L. 1995, ApJS, 98, 477

Jansen, R. A., Fabricant, D., Franx, M., & Caldwell, N. 2000, ApJS, 126, 331

Jones, A. P., Köhler, M., Ysard, N., Bocchio, M., & Verstraete, L. 2017, A&A, 602, A46

Jones, D. H., Read, M. A., Saunders, W., et al. 2009, MNRAS, 399, 683

Kim, D.-C., Sanders, D. B., Veilleux, S., Mazzarella, J. M., & Soifer, B. T. 1995, ApJS, 98, 129

Kniazev, A. Y., Pustilnik, S. A., Grebel, E. K., Lee, H., & Pramskij, A. G. 2004, ApJS, 153, 429

Lee, H., Grebel, E. K., & Hodge, P. W. 2003, A&A, 401, 141

Lira, P., Johnson, R. A., Lawrence, A., & Cid Fernandes, R. 2007, MNRAS, 382, 1552

Liske, J., Baldry, I. K., Driver, S. P., et al. 2015, MNRAS, 452, 2087

Moustakas, J. & Kennicutt, Jr., R. C. 2006, ApJS, 164, 81

Moustakas, J., Kennicutt, Jr., R. C., Tremonti, C. A., et al. 2010, ApJS, 190, 233

Osterbrock, D. E. 1989, Astrophysics of gaseous nebulae and active galactic nuclei

Pilyugin, L. S., Grebel, E. K., & Kniazev, A. Y. 2014, AJ, 147, 131

Rodríguez-Baras, M., Rosales-Ortega, F. F., Díaz, A. I., Sánchez, S. F., & Pasquali, A. 2014, MNRAS, 442, 495

Rosales-Ortega, F. F., Díaz, A. I., Kennicutt, R. C., & Sánchez, S. F. 2011, MNRAS, 415, 2439

Sánchez, S. F., García-Benito, R., Zibetti, S., et al. 2016, A&A, 594, A36

Sánchez, S. F., Kennicutt, R. C., Gil de Paz, A., et al. 2012a, A&A, 538, A8

Sánchez, S. F., Rosales-Ortega, F. F., Marino, R. A., et al. 2012b, A&A, 546, A2

Sarzi, M., Falcón-Barroso, J., Davies, R. L., et al. 2006, MNRAS, 366, 1151

van Zee, L. & Haynes, M. P. 2006, ApJ, 636, 214

van Zee, L., Haynes, M. P., & Salzer, J. J. 1997, AJ, 114, 2479

van Zee, L., Salzer, J. J., Haynes, M. P., O'Donoghue, A. A., & Balonek, T. J. 1998, AJ, 116, 2805